SCHOOL AND SOCIETY

PERIODICAL ROOM
RECEIVED
JAN 31 1916
UNIV. OF MICH.
LIBRARY

EDITED BY J. McKEEN CATTELL

Volume III | SATURDAY, JANUARY 29, 1916 | Number 57

CONTENTS

Town and City School Reports, more particularly Superintendents' Reports: PAUL H. HANUS 145

The College of Education of the University of Minnesota: LOTUS D. COFFMAN 155

The Elimination of Waste in the Teaching of High-School Science: R. A. MILLIKAN 162

Educational Events:

Military Drill at the University of Washington; Correspondence Study in Massachusetts; The Albany State College for Teachers 169

Educational Notes and News 171

Discussion and Correspondence:

Democracy and the War, a British Schoolmaster's View: B. C. WALLIS 174

Quotations:

The Professors' Union; The Professor's Place in the World 176

Books and Literature:

Hollister on High-School and Class Management: JULIUS SACHS 177

Educational Research and Statistics:

The Size of the Colleges from which Fellows are appointed at Harvard University: GEORGE B. RANDELS... 179

$3.00 A YEAR | PUBLISHED WEEKLY | 10 CENTS A COPY

THE SCIENCE PRESS

LANCASTER, PA. GARRISON, N. Y.

NEW YORK CITY: SUB-STATION 84

Entered as second-class matter January 2, 1915, at the Post Office at Lancaster, Pa., under the Act of March 3, 1879

Macmillan Books for Secondary Schools

Standard Books for the Spring Term

Elements of Composition. By *H. S. Canby and J. B. Opdycke*	$1.00
Oral English for Secondary Schools. By *W. P. Smith*	1.00
Ancient Civilization. By *R. L. Ashley*	1.10
History of the Ancient World. By *G. W. Botsford*	1.50
Students' History of the United States By *Edward Channing*	1.40
American Citizenship. By *C. A. Beard and M. R. Beard*	1.00
Elements of Economics. By *H. R. Burch and Scott Nearing*	1.00
Elements of Agriculture. By *G. F. Warren*	1.10
Elementary Biology. By *J. E. Peabody and A. E. Hunt*	1.25
Practical Physics. By *N. H. Black and H. N. Davis*	1.25
New Physical Geography. By *R. S. Tarr*	1.00
Elementary Algebra. By *Florian Cajori and L. R. Odell*	.65
Plane and Solid Geometry. By *W. B. Ford and Charles Ammerman*	1.25
An Introduction to Latin. By *J. C. Kirtland and G. B. Rogers*	.85
High School Course in Latin Composition. By *C. M. Baker and A. J. Inglis*	1.00
First Book in German. By *E. W. Bagster-Collins*	1.10
First Book in French. By *E. F. Maloubier and J. H. Moore*	1.10

New and Forthcoming Books in Various Subjects.

Soils and Plant Life as Related to Agriculture. By *J. C. Cunningham and W. H. Lancelot*, of Iowa State College. 348 pages	1.10
The Principles of Agronomy. By *F. S. Harris and George Stewart*, of Utah Agricultural College. 430 pages	1.40
Practical Zoology. 495 pages. By *Robert Hegner*	1.40
Laboratory and Field Work in Zoology. By *Robert W. Hegner*. 73 pages	.40
A Brief Survey of English and American Literature. By *F. M. Tisdel*, of the University of Missouri	*In press*
Medieval Civilization. By *R. L. Ashley*, of the Pasadena High School	*In press*
Constructive Geometry. By *E. R. Hedrick*, of the University of Missouri	*In press*
A French Reader. By *L. A. Roux*, of the Newark Academy	*In press*
Laboratory Lessons in General Science. By *Herbert Brownell*, of the Teachers' College, University of Nebraska	*In press*
Social Problems. By *E. T. Towne*, Carleton College	*In press*
Salesmanship. By *S. R. Hoover*, High School of Commerce, Cleveland	*In press*

Boston Chicago San Francisco

THE MACMILLAN COMPANY

Publishers 64-66 Fifth Avenue New York City

Dallas Atlanta Seattle

SCHOOL AND SOCIETY

Volume III SATURDAY, JANUARY 29, 1916 Number 57

TOWN AND CITY SCHOOL REPORTS, MORE PARTICULARLY SUPERINTENDENTS' REPORTS[1]

THIS paper is a preliminary study of school reports. It covers twenty-six reports for twenty-five towns and cities in all sections of the United States. The towns and cities were chosen at random from a much larger number—several hundred. The population of the towns and cities chosen varies from about 5,000 to more than 300,000. An attempt to classify the contents of school reports[2] for these towns and cities is given in Table I.

The material in school reports can be roughly classified under the following main heads: 1, the report of the board; 2, the report of the superintendent; 3, subordinate reports, *i. e.*, reports of other supervisory officers and of teachers, of officers and committees of the board other than business officers or committees; 4, reports of business officers and committees; and 5, miscellaneous reports and items, such as reports of official and unofficial associations of teachers; parents' associations; boy scouts; graduation exercises; dedication exercises—a long list of reports or items, including, among other things, much useless material.

A mere glance at Table I. will show that a comprehensive range of subject-matter is treated in most reports, whatever the size of the school system. It is true, of course, that the range of activities discussed in the report of a given city varies from year to year; and that the absence of details concerning certain activities in the report for a particular year does not mean that such details are not found in the report of another year for the same city. But, taken together, the reports represented in the table show fairly well the general scope of contemporary school reports throughout the country.

A few words of explanation concerning Table I. are necessary. Columns 1 to 5 explain themselves. Beginning with column 6 the small letters and dashes should be interpreted as follows:

a means embodied entire, or in part, in the superintendent's report as an integral part of his report;

b, printed as a separate document in the superintendent's report, but not over his signature;

c, not incorporated and not used in the superintendent's report, although printed in the same pamphlet;

c', not a part of the superintendent's report, but discussed or, at least, referred to in it;

d, the city in question employs an officer of the sort named at the head of the column, but the school report contains no report from him for the year under consideration;

x, published in a separate school document;

—, no item of the sort; or no paid officer of the kind indicated at the top of a column is employed in the school system; or the

[1] Address of the vice-president and chairman of Section L, Education, American Association for the Advancement of Science, Columbus, Ohio, December, 1915.

[2] Towns and cities commonly publish a school report annually.

TABLE I

ANALYSIS OF (26) SCHOOL REPORTS (25 TOWNS AND CITIES)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Approximate Population	Total Pages in Entire Report	Approximate No. Pages in Board's Report	Approximate No. Pages in Supt's Report	Statement of Aim	Report of Asst. Supt. One or More	Report on Results of Previous Recommendations	Recommendations for Improvements or Extensions	Reports of Supervisors: Gen'l Supervisor, German, Phys. Training, Reading, Penmanship, Domestic Sci., Domestic Art, Drawing and Art, Music, Man. Tr., Defectives (All Kinds), Kindergarten, Evening Schools, Vacation or Summer Schools One or More	Report of H. S. Principals or Teachers	Report of El. Sch'l or Intermed. Sch'l Principals or Teachers	Report of Trade Sch'l and Continuation Sch'l Officers or Teachers	Report of Normal Sch'l or Training School Officers or Teachers	Report of Officers of Board of Examiners	Report of Division of Research or of Individ. Research	Report on Vocational Guidance
A 1914	O3	239	0	239	*a*	*b*	*a*	–	*d*	*b*	*b*	*d*	*d*	*d*	*a*	*a*
B 1914	U3	92	0	92	–	*a*	–	*a*	*a*	*a*	*b*	*a*	*a*	*a*	–	–
C 1914	O3	465	18	365	–	*b*	–	–	*d*	*b*	–	*b*	*b*	–	*b*	*b*
D 1914	O3	299	0	255	*a*	*d*	–	–	*b*	*b*	–	*b*	*b*	–	*b*	*b*
E 1914	U3	112	0	112	–	*b*	–	–	*b*	–	–	–	–	–	–	–
F 1913–14	U3	309	2	280	*a*	–	–	–	*b*	*b*	–	–	–	–	–	–
G 1914	U3	90	7	65	*a*	–	–	*a*	–	–	–	–	–	–	–	–
H 1914	U3	326	0	155	*a*	–	–	*a*	*a*	–	–	–	–	–	–	–
I 1913–14	O3	361	29	290	–	*b*	–	–	*b*	–	–	–	–	*b*	–	–
J 1913–14	U3	105	0	35	–	*b*	–	–	*b*	*b*	–	*c*	–	–	–	–
K 1913–14	U3	43	2	41	*a*	–	–	*a*	–	–	–	–	–	–	–	–
L 1913–14	O3	249	0	236	–	*a*	*a*	*a*	*a*	*a*	–	*b*	–	–	*a*	–
M 1913	U3	127	4	90	*a*	–	–	–	–	–	–	–	–	–	–	–
M 1914	U3	158	3	110	*a*	–	–	*a*	*b*	*b*	–	*b*	–	–	–	–
O 1914	O3	613	0	613	–	*b*	*a*	*a*	*b*	*x*	–	*x*	–	*b*	–	–
P 1914	U3	93	9	67	–	–	–	*a*	*b*	*b*	–	–	–	–	–	–
Q 1914	U3	142	8	55	–	*d*	–	–	–	*b*	–	–	–	–	–	–
R 1913–14	U3	103	10	30	–	*d*	–	–	*d*	–	–	–	–	–	–	–
S 1914–15	U3	413	10	370	*a*	–	–	–	*a*	*b*	–	–	–	–	–	*a*
T Jan., '15	U3	45	0	45	*a*	–	–	–	*a*	–	–	–	–	–	*a*	–
U 1914–15	U3	112	18	94	*a*	–	*a*	–	*a*	*b*	*b*	–	–	–	–	–
V 1913	O3	638	16	380	*a*	*a*	*a*	–	*a*	*a*	–	–	*a*	*b*	–	*a*
W 1914	U3	191	0	153	–	–	–	*a*	*b*	*a*	–	*a*	–	–	–	*a*
X 1914	U3	114	0	114	*a*	–	*a*	*a*	*a*	*a*	*a*	–	–	–	–	*c*
Y 1914	U3	24	1	5	–	–	–	–	–	*a*	*b*	–	–	–	–	–
Z 1912–14	U3	39	0	28	*a*	–	–	–	–	–	–	–	–	–	–	–

Cities: U3 = under 300,000; O3 = over 300,000.

school report gives no information as to whether there is such an officer.

For example, the data in column 7 should be read as follows: The superintendent's report of City *A* contains at least one report of an assistant superintendent; and this assistant superintendent's report (or these reports), though printed as a separate document (or documents) in the superintendent's report, is made a part of the superintendent's report, though not in that portion of the report signed by the superintendent. A similar statement applies also to five other reports, namely, the reports of the superintendents for cities *C*, *E*, *I*, *J* and *O*. (As a matter of fact, the superintendents' reports for all these cities, except *E* and *J*, contain several such assistant superintendents' reports; and *E* and *J* each contain one.) Further, the data of column 7 show that the report of the superintendent for city *B* embodies entire, or in part, the report of at least one assistant superintendent; and a similar statement applies to the superintendents' reports of cities *L* and *V*. (*B* contains only one such report; *L*, two; and *V*, several.) Finally,

TABLE I—(*Continued*)

ANALYSIS OF (26) SCHOOL REPORTS (25 TOWNS AND CITIES)

	18	19	20				21	22	23	24	25	26	27	28	29	30	31	32	33	34
							Miscellaneous Items													
	Reports of Officers or Committees of Board Other than Business Officers, Medical Inspection, School Nurses, Truant Officers, Agt. for Age and Employment Certificates School Census, Playgrounds, Free Pub. Lectures, Public Library, School Gardens	Reports of Business Officers, Sec'y and Bus. Mgr., Auditor, Construction Dep't, Supplies, Financial	Statistics, Comparative by Years or Otherwise	Few or No Comparative Statistics	Fair to Adequate Interpretation of Statistics	Very Little or No Satisfactory Interpretation	Schedules of Salaries With or Without Names of Recipients	Courses of Study	Rules and Regulations of Board	Authorized Books and Supplies	Teachers Lib'ry and Educ. Museum	Parents' Associations	Official Associations of Teachers	Unofficial Associations of Teachers	Publications by Teachers	Programmes of Graduation Exercises	Names of Graduates of Year	Boy Scouts	Directory or Lists of Teachers and Other Employees	Photographs, Persons, Buildings and Grounds, Activities, Interiors, Architects' Plans
	One or More	One or More																		One or More
A	*c*	*x*	*x*	–	–	–	–	–	–	–	–	–	*b*	*b*	*b*	–	–	–	–	–
B	*a*	*d*	*a*	–	–	*a*	*c*	–	–	–	–	–	–	–	–	–	–	–	–	–
C	–	*c*	–	*a*	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*c*
D	*b*	*c'*	–	*a*	*a*	–	–	–	–	–	–	–	–	–	–	–	*a*	–	*c*	*c*
E	–	*d*	–	*a*	–	*a*	–	*c*	–	–	–	–	–	–	–	*a*	*a*	–	*c*	–
F	*b*	*c*	–	*a*	–	*a*	*c*	*b*	*c*	*b*	*b*	*b*	–	–	–	–	*c*	*b*	*c*	*c*
G	*a*	*c'*	*a*	–	*a*	–	*a*	–	–	–	*c*	–	–	–	–	–	–	–	–	–
H	–	*c*	*a*	–	–	*a*	–	–	–	–	–	–	–	–	–	–	*a*	–	–	*c*
I	*c*	*c*	*a*	–	–	*a*	–	–	*c*	–	–	–	–	–	–	–	–	–	*c*	–
J	–	*c*	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*c*
K	*b*	*c*	–	*a*	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
L	*b*	*c*	–	*a*	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	*c*
M	–	*c*	*a*	–	*a*	–	–	–	–	–	–	–	–	*c*	–	–	*a*	–	*c*	–
M	*b*	*c*	*a*	–	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	*c*	–
O	*b*	*x*	*a*	–	–	*a*	–	–	–	–	–	–	–	–	–	*c*	*c*	–	–	–
P	*b*	–	*a*	–	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	*b*	*c*
Q	*c*	*c*	–	*a*	–	*a*	*c*	–	–	–	–	–	–	–	–	–	–	–	*c*	*c*
R	*c*	–	*a*	–	*a*	–	*a*	–	–	–	–	–	–	–	–	–	*c*	–	–	–
S	*c*	*c*	–	*a*	–	*a*	–	–	–	*a*	–	–	–	–	–	–	–	–	*c*	*c*
T	*a*	–	*a*	–	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
U	*a*	–	–	*a*	*a*	–	–	–	–	–	*c*	–	–	–	–	–	–	–	*c*	*c*
V	–	*c'*	*a*	–	–	*a*	*a*	–	–	–	–	–	–	*a*	–	–	–	–	–	*c*
W	*b*	–	*a*	–	*a*	–	*a*	–	*a*	–	–	–	–	*a*	–	*a*	*a*	–	*c*	*c*
X	–	–	–	*a*	–	*a*	–	–	–	–	–	–	–	–	–	–	*c*	–	–	*c*
Y	–	–	–	*a*	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Z	*c*	*c*	*a*	–	*a*	–	–	–	–	–	–	–	–	–	–	–	–	–	*c*	–

although three cities, namely, *D*, *Q* and *R*, employ assistant superintendents, no reports by these officers appear in the school report.

The number of school reports in which such subordinate reports are found is seldom important, however; this number varies from year to year. The use made of these subordinate reports or other data by the superintendent is the important thing.

1. THE REPORT OF THE BOARD

Table I. shows (Column 4) that the board's report, exclusive of the superintendent's report, varies in length from a paragraph or two to several pages. It is usually an introductory general statement. When it enters into details, it deals by preference with the business affairs of the school system, although it occasionally deals also with administrative and educational questions.

For example, the board's report for one of the cities deals with the New Buildings provided during the year and the cost of those buildings; Wider Use of the School Buildings, expressing approval of the policy involved; Evening Schools, with a suggestion of the wisdom of keeping one or more of them open for a longer period during

the year; Child Labor, an argument for improving the administration of labor certificates; an investigation of school sites; Beautifying School Ground with emphasis on further progress in the policy already adopted; New Building Policy, being an argument for a consistent policy of providing adequately for the progressive needs of the city's children.

The board's report for another city—very much smaller than the foregoing—deals almost entirely with the business affairs of the school system. The last three paragraphs, however, go farther. I quote them in full:

> The report of the superintendent, in particular, we trust that every one will carefully read. It concerns *your* business, the way *you* are spending *your* money to educate *your* children, and treats impartially of the credits and defects of our system.
>
> We call attention to the fact that these are the views of the superintendent alone, and are published without criticism or endorsement of the committee, as he is so much better qualified to speak that either would be equally futile on our part.
>
> We would merely say in comment that while many of his "anticipations" are our wishes, we do not ourselves anticipate many of these things for years to come, with the exception of further relief at the north end of the town, which we may be compelled to ask for next year.

The report of the board of another city deals with the following topics: Outlays; Growth; Changes—a single paragraph; Litigation; Consolidation (of several outlying sections to form part of the city school system); Legislation (state) affecting the city school system; Administration—Change in superintendent and enlarged space for administrative offices; School Survey of the preceding year—a single paragraph merely reciting the fact that a survey had been made and giving the names of the members of the survey staff; The Future—a short paragraph citing in general terms a few items of a progressive policy to be carried out in the immediate future; The Budget, giving totals of expenditures for the ensuing year. The chairman agrees to the recommendations, but wishes to cut out $25,000, because he does not think the item for which this money is to be spent is authorized by the laws of the state. The board with the exception of the chairman also recommends a tax levy for a bond issue to build and adequately equip a comprehensive "first unit of a School of Trades." Finally, the report contains a series of votes passed by the board on various business and administrative questions.

It is clear that the taxpayer in the city last referred to who is seeking for light on the question of spending more money for the schools will be somewhat confused by the board's report. Similarly, the citizen of the second city will derive from the board's remarks about the superintendent's "anticipations" no clear idea of the board's attitude toward progress; he may even infer from it that the superintendent manifests an intemperate desire for progress, but that the school committee can be relied upon to hold him in check.

The foregoing illustrations may serve to show that just as the length of the board's report (or introduction) varies greatly, so does its value. On occasion, when it clearly and forcibly expresses intelligent lay opinion, it may have an important influence in winning public approval for a progressive educational policy; but, in general, it must be said that the briefer the board's report the better it is; and that, in most cases, a mere statement of the vote making the superintendent's report the board's report is quite sufficient—and best.

This statement must not be interpreted as an attempt to minimize the board's responsibility to the people. Nor does it indi-

cate that the board can safely either ignore or evade the duty of making a satisfactory report to the people. On the contrary, it shows that the board knows how best to perform that duty. It is not the board's duty to make such a report, but to see that it is made. The board itself has neither the time nor the technical knowledge to make such a report, but it should know how to secure such a report from the superintendent. Hence, the board's vote transmitting the superintendent's report as the board's report to the people shows (or perhaps we would better say should show) that the board has required the superintendent to prepare a report; and that after studying the superintendent's report they have found it without or with modifications suggested by them to be the report needed or desired.

Any member of a school board who takes his duties seriously will agree that such a study of the superintendent's report as enables him to vote intelligently on it as the report of the board to the people is a time-consuming, exacting and important duty. Indeed, it may be said, in passing, that next to the selection of the superintendent himself, the most important duty of the board is (or should be) requiring, hearing (or reading), criticizing and assimilating the reports of the superintendent—not merely his annual report, but the reports of his work submitted month by month, and on occasion, oftener. Moreover, since the vote of the board adopting the superintendent's report as the board's report indicates the board's approval of that report, both in substance and in form, the character of that report is, among other things, an indication of the good or bad judgment of the board with respect to the selection of a superintendent, and indeed with respect to the whole educational undertaking entrusted to them by the people.

So much for the report of the board. The remainder of this paper will be devoted to a discussion of the superintendent's report.

2. THE SUPERINTENDENT'S REPORT

Since the board's report is apparently intended for the people, it is clear that the superintendent's report is more or less intentionally also intended for the people. I say more or less intentionally because it is not always possible to ascertain from the superintendent's report itself as published just what its purpose is—beyond the obvious general purpose of giving a mass of more or less well-organized information about the schools to any one into whose hands the report may fall. This information ranges all the way from trivial commonplaces or from technical details of school policies, procedure, and results, to abstract discussions of educational questions with much or little—and sometimes no—direct or special application of such discussions to local conditions and needs.

Also it is difficult to make out, in many cases, just what portion of the entire school report the superintendent's report is; for the running title of the pages is often "School Report" (or some similar title) or "Superintendent's Report" in a document of which only a part is signed by the superintendent. Accordingly, for the present study a working definition of the superintendent's report is needed, and I shall adopt the following: The superintendent's report is (1) that part of the school report signed by the superintendent; and also (2) that part of it ascribed to the superintendent or claimed by him as indicated by the make-up of the entire school report. The figures in columns 3, 4, and 5, Table I, taken together, therefore, indicate fairly well what portion of the entire school report is regarded as pertaining to the affairs immediately under the superintend-

ent's direction as administrative and executive officer. For certain of the cities (*H, J, Q, R, V*) in the table, it appears that the superintendent's report thus defined constitutes only about a third or a half of the entire document.

Since it is impossible within the limits of a single paper to deal with all the details of superintendents' reports represented in Table I., I select the following for consideration in this paper, touching on some other items only incidentally, and leaving these and still others for fuller consideration on some other occasion. The topics to be considered are:

1. The aims of the superintendent's report. What is the superintendent's report for? And as subordinate to this main topic, the following:

2. The reports of subordinate educational officers—assistant superintendents; supervisors or directors, principals of high schools, elementary schools, trade and continuation schools, teachers; and other officers not business officers—what are they for?

3. Business officers' reports—what use is made of them in the superintendent's report?

4. Statistics in the superintendent's report—what are they for?

5. Photographs of buildings or interiors, of persons, or of activities; architects' plans—what are they for?

(1) *Aims of the Superintendent's Report*

Turning to Table I., column 6, we see that 14 (about 54 per cent.) of the superintendents make more or less specific statements of the particular aim or aims of their reports. The following quotations illustrate the nature of these statements.

The superintendent of *A* says:

> The chief purpose of the present report is to show what the year has brought forth—what "next steps" have been taken, and with what result, what new activities have been or should be introduced, and how the old ones have been or should be modified.

Then follows a topical enumeration of 18 "next steps to be taken" which were proposed in the report of the preceding year, after which he says:

> In order to keep this volume in due bounds . . . the superintendent will confine himself in large measure to the consideration of the above matters.

The report itself then fulfills its promise, and presents in clear, terse, non-technical but adequate terms an orderly discussion of the items named. It is an excellent illustration of what a report intended for the general information of the teaching staff and the public should be.

The superintendent of *D*, after pointing out that the board and all the employees of the school system "hold their positions only that they may serve the people; that they may interpret and may express in action the ideals of the city" then goes on:

> What are some of these ideals and how may they be expressed? How may a community use its resources to produce an education that shall make for the highest social, industrial, economic and civic efficiency? In the following pages I shall try to answer some of these questions; to show what has been done, and to indicate what should be the next and succeeding steps in the realization of such a programme.

He then refers the reader to the reports of supervisors, principals, and heads of departments for details, and concludes his statement of aims as follows:

> I shall use in the body of this report only such features as may be necessary for the more general discussion.

This report, like the foregoing, fulfills its purpose, but its subject matter is not so well organized; and particularly the reader fails to realize that he is being led progressively through the considerations presented for the sake of the ends in view—the an-

swers to the questions proposed in the first part of the superintendent's statement of aims. If the superintendent of *D* had enumerated the topics to be treated in view of these aims, and also if he had discussed those topics in such a way as to show just how his treatment of each contributes to the end sought, his report would be a much stronger document. As it is, the report is merely a descriptive account of the school system's activities, interesting in themselves, but lacking the cumulative effect of a series of progressive answers to the questions proposed, especially for readers who may not read the entire report—undoubtedly the majority.

> What does it mean to undertake to write the annual report of the work in the City Schools of F.....?
>
> In the first place it means to give an account of the care, condition, and use of (nearly $3,000,000, he gives the exact amount) worth of school property.
>
> It means to tell how (more than $400,000, the exact amount is given) was raised and expended for the support of the schools during the year.
>
> It means to tell something of the 414 people who faithfully served the city as teachers during the year, and who received (more than $300,000, the exact amount is given) for these services.
>
> It means to tell something of the (more than 16,000, the exact number is given) girls and boys, young men and women, who attended these schools as pupils during the year.
>
> It means to tell something of how these teachers and pupils lived and studied and worked and hoped and feared and struggled during the year.
>
> It means to tell the thread of a story, full details of which would enter into practically every home in F, and would affect to a greater or less extent practically every one of her one hundred thousand inhabitants.

Unfortunately this report does not meet the expectations aroused by this earnest opening. The disparity between the promise of the beginning and the subject matter of the report is marked. After the first few pages dealing with the material equipment of the schools and some financial matters of importance, the subject matter of the report is too miscellaneous and unorganized to justify the promise of the superintendent's description of what his report should be. Perhaps the superintendent himself felt this, for near the end of his own report he says:

> In writing this report it has been my purpose to give, in so far as might be possible, an insight into the present progress and the future needs of our schools. These are set forth in much more detail in the reports of the various supervisors of the departments printed in this volume. It is hoped that these will be generally read.

In other words, he has not himself specifically used the subordinate reports referred to in adequate or orderly fashion so as to realize his aim in writing the report; he now throws the burden of such realization almost completely on the reader by referring him to those subordinate reports. What seems to me the proper use the superintendent should make of subordinate reports will be considered later in this paper. At this point I merely desire to point out that in the portion of the school report signed by himself, the superintendent in question has not made either adequate use of those reports or the best use of them so far as he has used them at all.

The superintendent of *G* presents, on the opening page of his report, the following topics with a number of sub-topics under each, and then states his intention of dealing with these topics in order: Organization of the School Department; Important Facts and What They Mean; Principal Changes and Improvements; Criticisms and Recommendations; Things to Think About; The ——— Foundation's Survey; and a Summary. The report not only does discuss these topics in order, but it gives at the close of each subdivision a summary of findings and the appropriate recommendations to which they point. One can not fail to get from this report definite knowl-

edge of the present condition of the schools and what is needed for their progressive improvement. The report is marred by the somewhat sensational phrasing of two important questions printed in large heavy black letters on the *yellow* covering of the pamphlet, viz.:

G Schools

Are the schools of *G* a public charity to be supported with as little outlay as possible? Or is the education of our children a safe and profitable enterprise in which we shall invest our public funds?

What kind of education shall *G* buy in 1915?

But apart from this defect and some minor defects of form (questionable and even incorrect English here and there), the report is a good illustration of such a clear and forcible presentation of school facts and the validity of the recommendations to which they give rise, as can not fail to make a strong impression on every reader.

The superintendent of *H* says:

The details showing the number of pupils, the grades in which they are classified, the progress which they have made in their studies, the expenditures that have been necessary in carrying on the different departments of the schools, and many other items of vital importance to the district are embodied in the statistical tables and departmental reports that are included herewith.

Owing to the existence of certain conditions under which we have labored for the past few years, two or three problems of unusual importance have had to be met,

and he then proceeds to the discussion of these "two or three problems" in some detail—a well-arranged, clear and vigorous report.

The superintendent of *M* for 1913 says:

This report will confine itself to a single issue. Indeed, there seems to be but one issue to-day concerning the *M* schools. That issue, while difficult to solve, is simple to comprehend. It concerns the cost, not the details of expenditure, but the total cost of maintaining the school system. . . . In other words the single issue that has been raised concerning the *M* schools may be briefly stated as follows: . . . the total cost is too great, is more than the city ought to spend for education.

The entire report is devoted to a clear exposition and analysis of the cost of the contemporary educational opportunities provided by *M*, compared with the cost of the much less expensive educational opportunities provided eight years ago. Limited to the exposition of a particular topic, and partly because of that fact, this is one of the best reports I have ever seen.

The superintendent of *M* for 1914 says:

Instead, therefore, of attempting to write a comprehensive report of the present educational activities of *M*, I have decided to present some of the important facts of the work of the schools through special reports prepared by those who are in charge of and directly responsible for results in the various departments.

In passing, it may be said that this is the easiest known method of preparing a superintendent's report. Some further comments on this method—usually a bad method—of preparing a report will be made later on. The method is justified in the case just cited because the superintendent had only been in charge of the schools a few months when his report was due.

The superintendent of *S* says:

My annual report to the board this year is not so much a record of past achievement as it is a snapshot of what is now doing in the schools—a summary of present conditions and of future needs. With this end in view, I have endeavored briefly to epitomize the yearly reports of the various departments herewith submitted, so that in a few minutes one may learn what they contain;

and he adds rather naïvely,

however, I strongly urge that when printed the members of the board read them in detail, since they are an interesting résumé of the varied character of the work in the *S* schools.

While some of this superintendent's endeavors to "briefly epitomize" the yearly reports of the various departments are too general and too brief to be of real value to the reader, taken together they never-

theless represent a serious effort on the part of the superintendent to present his own view of the activities of the school system as derived from the reports of his associates and subordinates and from his own observation. He has not merely compiled the reports of his assistants, as some other superintendents have, but he has used them.

The superintendent of *T* says:

> Among the activities which have been added to school administration since the beginning of my superintendency I list the following:

After giving the list, he continues:

> Details with regard to these activities are given under their respective titles in the following report. These details and the other statistical material have been prepared by the Division of Reference and Research.
>
> This Division has now been in operation one year, and amply demonstrates its value to the schools of *T* by the work here presented.

This report throughout shows the application of contemporary scientific methods in school administration and supervision. It is a report based on school facts and not on opinions. It therefore carries conviction to those who are conversant with the method employed. But it is doubtful if many lay readers will take the trouble to assimilate it, and very doubtful, therefore, whether the desire expressed in the report "to place a copy in every home from which children are sent to the public schools" will, if carried out, have the intended effect on the people. The facts shown by such a study of the schools as this report presents, together with the lessons they teach or the recommendations to which they give rise, should be definitely and interestingly stated in non-technical terms in a report intended for the people; and while reference should be made in such a report to the technical studies on which it is based, those studies themselves should be given in a separate report to the supervisory and teaching staff—to those who are or should become proficient in the scientific study of educational procedure and results.

The superintendent of *U* says:

> Last year in my report I suggested that the following facts be determined in order to find out wherein our schools were failing. All these matters are treated in various contributions to this year book, and I have put after each subhead the report and page number where you can find the discussions.

He then gives a list of fifteen topics treated in his present report, incidentally giving the proper credit for the detailed study of these topics, when such study was not made by himself, to those members of his staff who made them. This report, like the preceding, exemplifies the use of modern scientific methods in school administration. But much more than the preceding it presents the results of the technical studies dealt with in readable fashion; and in each case gives in terse sentences the conclusions to which they point and the measures that should be taken if improvement is to be expected. This report further illustrates the possibility of securing the gradual adoption of habitual self-examination within the school system, *i. e.*, habitual examination by the teaching staff of their own performances under the leadership of a competent superintendent. I say gradual adoption because the examination of the report of the same superintendent for the preceding year shows only such studies by the superintendent; none by members of the staff.

The superintendent of *V* says:

> The report of the Department of Instruction of the Public Schools of *V* for the year ending June, 1913, is arranged as follows:

He then enumerates six main topics, one of them with eleven subtopics. It is worth noting that the first of these topics is "Expenditures for Instruction"; for although his discussion of this topic is relatively brief, it shows that the superintendent regards cost of instruction, to some extent

at least, as well as instruction itself within his province. Then follows an orderly discussion, sometimes very detailed, as the length of the report (380 pages) indicates, of the topics enumerated. This is a readable report; but its length and the total bulk of the volume (638 pages) in which it is printed are so great as to repel any but the most courageous reader, or the most earnest seekers for information. And the bulk and weight of the volume must be a severe strain on the perseverance of even such persons. Such a report, if intended for the people—it is specifically designated as a part of the board's report—contains much matter that could be condensed to advantage. It also contains much matter that need not be printed at all; but of this last feature of this report and of many other reports, more hereafter.

The superintendent of *X* says:

> A school report aims to give to you and to the public in condensed and comprehensive form such information as is necessary to thoroughly understand the problems which confront an educational board and, at the same time, to show what actions have been taken to meet the needs of the community. To do this it is necessary to discuss financial measures, the plans and policies of your administrative officers, your teaching force, the different agencies which have been established to bring the best in education to the greatest numbers, the school plant, and such statistical data as will best show the rapidly changing requirements. This report will also contain extracts of reports from your supervisors.

It can not be said that the superintendent's report gives this information in such form as to facilitate its assimilation. For example, immediately under the statement of aims just given, there is a break in the text with the heading *School Buildings*. The discussion of this topic includes statistical tables of costs of buildings with photographs and floor plans of some of them. Then, without any introduction, tables are given presenting statistics of persons of school age; registration; numbers of high-school graduates for a term of years; then a table of comparative cost per pupil of fuel and light for a number of years; a list of the names of superintendents since 1867; a similar list of names of high-school principals; a list of members of the board of education and of its secretaries and treasurers for 40 years; then, similarly a series of financial tables; then a table giving the number and percentages of promotion by grades for all the elementary schools; then abruptly appears the report of the high-school principal; and the remainder of the superintendent's report consists almost wholly of subordinate reports addressed to the superintendent, but presented without comment. Such a report is confusing and disappointing—especially so in view of the promise given at the outset; and it illustrates again that unsatisfactory method of making a superintendent's report which consists merely or chiefly in assembling a mass of subordinate reports without specific references to them or interpretation of them.

The superintendent of *Z* says:

> The purpose of this report is to give a short account of the work which our schools have done during the past year, and to point out to what degree they are ready for more progress and improvement.

This statement is in substance the statement of aim in many reports. Taken as it stands, it is too general to be of any real value. If it expresses the real aim of the superintendent in every report he writes, and he carries out his purpose, it is clear that there will probably be a good deal of repetition from year to year with corresponding lack of interest for both writer and readers. The superintendent of *Z* is not content, however, with this general statement, for in the next paragraph he adds:

The most noticeable lines of progress have been made in the following: (1) Semi-annual promotion; (2) decreasing percentage of failures; (3) plan of grading and examination; (4) equipping of our school plant with the most progressive textbooks; (5) improving physical school plant—(*a*) by addition to school; (*b*) by acquisition of large site for new building in northern part of town; (*c*) by securing bond issue for a new eighteen-room building in northern part of town.

Unfortunately, however, although the reader's expectation is thereby aroused, only the first three topics are discussed in some detail; some of the others receive no consideration at all; and some other topics for which the reader has not been prepared receive brief treatment, or are at least mentioned. Although the superintendent of *Z* states that he was just leaving for work elsewhere and regrets that, in consequence, his report must be brief, this report, like some of the others, is disappointing. It does not fulfil either the general purpose expressed in the first statement, or the more specific purposes suggested in the second paragraph.

PAUL H. HANUS
HARVARD UNIVERSITY

(*To be concluded*)

THE COLLEGE OF EDUCATION OF THE UNIVERSITY OF MINNESOTA[1]

IF it were not bad form for one who is as intimately and vitally interested as any person in the state in the qualifications of teachers, I should like to congratulate Minnesota upon her achievements in education and upon the superiority of her teacher-training agencies. I should like to contribute my share of work to the making of a profession out of the occupation of teaching, to improving the character of class-room instruction, to investigating the most economical methods of learning, and to extending and promoting the welfare agencies of the public school in Minnesota. I do not come with set creeds nor fixed theories, nor am I dominated with a desire for the institution which I represent to profit at the expense of others. There is work enough and room enough for us all. Every teacher-training agency of the state has its function to fulfil, its duty to perform, its obligation to discharge, and, if each is absorbed by the grand whole to which each is making its particular contribution, there can be no controversy with reference to the division of responsibility. Sympathetic cooperation should mark all our efforts.

I regard this particular session of the State Association as an opportunity for the State Department of Education, the normal schools, and the College of Education to define more clearly than heretofore, if possible, the service they are rendering and plan to render the state. So far as the College of Education is concerned, I can not discuss this in terms of the will of the board of regents, as no official action has been taken outlining and describing a plan for the development of the College of Education. I am, however, informed that the board is intensely interested in the welfare of the college, and expects to make every reasonable effort to insure its expansion and growth. In view of the circumstances, it will be necessary therefore for me to let the institution speak for itself. That will not only be my policy now but in the future as well. It is a matter of common knowledge that no matter how much one may exploit an institution, in the long run it is results that count. Every institution that parades every detail of management, of organization, and of policy before the public is soon discredited. The state has a perfect right of course to investigate any institution supported by public funds, and it should do so occasionally, but such a checking should be done at close and not at long range. The measure of an institution

[1] A paper read before the Minnesota Education Association, October 27, 1915.

is not to be found in the extent to which its "goods are kept in the front window," but in its achievements. It will be our purpose at the College of Education to achieve as much as possible, to secure the maximum efficiency with the force, the influence, and the funds at our command.

It is clear that college ideals can never be disassociated from the men who compose the faculty. We have found that there is a conscious attempt and desire on the part of the various departments of the University of Minnesota offering academic instruction to choose men of liberal training and of expert teaching skill to give courses to those preparing to teach. And within the department of education itself we have a small group of people who are interested in the development of the technique of teaching and in educational research. These two great functions can not be realized in a college independently of each other. We appreciate the fact that one may be a very acceptable teacher and poor in research, or that he may be good in research and poor in teaching, but in our particular field, where the frontier of knowledge is so near at hand, it is the business of a college of education to discharge both functions. Four of the men of professorial rank in our department are bringing to a conclusion investigations extending over several years and their results will be published within the present year.

The spirit of the man who delves in new fields, who discovers new facts, who appreciates how knowledge is made, is contagious. Already this year sixteen graduate students in education have associated themselves with these men, and these students are at work upon special problems in education. In addition to the regular class work required of them, they meet without credit in a bi-weekly conference with the faculty for a discussion of the particular problems which they are investigating. Some of these problems are in the history of education, some in educational psychology, some in administration and supervision.

We believe that an institution so far as its ideals are concerned will be what its faculty expect it to be, and we expect this college to become as good a place for graduate work in education as can be found. Whenever we find those who feel that they can do better elsewhere, we shall advise them to go where they think they can get the best work. But we shall bend every effort to produce results which show that those who teach in our institution are *students* of education, men and women imbued with high professional motives, and conscious of their social servantships. From such teachers will emanate the ideals of the college. The traditions they leave behind will be traditions for worthy intellectual work. The ideals they will seek to establish will be the ideals of patient, trustworthy investigation. The contributions they make will be designed to liberalize educational thought and to improve teaching. Such will be one of the greatest services which this or any other college can render this or another state.

The mature men and women who have come and who will continue to come to us are likely to enjoy positions of educational leadership in the great northwest. Some of them will teach in normal schools and some will become public school administrators. We maintain that an increasing amount of attention must be given to the training of people for such positions. Those who are to be the teachers of teachers in other colleges or normal schools will now find for the first time in the history of the College of Education enough work to enable them to secure the degree of doctor of philosophy. And those who are interested in public-school positions will find the field for the first time being differentiated

into administration, supervision and teaching. An increasing amount of attention is being given to the first two of these, administration and supervision.

For many years the public has been quoting with glibness and with apparent conviction that old aphorism "As the teacher so the school," a doctrine which contains a large element of truth, and yet is accompanied by many fallacious implications. There was a time when this aphorism was true, but that day passed when the American people began to provide for supervision as a function of public education. We know for a positive fact if we take three groups of teachers having approximately the same native ability but differing as to training: one group of whom are college graduates; another, normal-school graduates; and the third, high-school graduates, and provide no supervision for the first group, indifferent supervision for the second group, and expert supervision for the third, that the results secured will be in terms of the character and amount of supervision received and not in terms of the training of the respective groups. These facts are not presented as an argument against the training of teachers but as an argument for the training of supervisors and administrators. That the superintendents and supervisors of the next generation will have more scholarship and will be keener judges of instruction is no criticism upon those of the present generation. We shall not only need men who are good organizers and good managers but men who know how to apply scientific tests and standards for the improvement of their schools. Those who trust to mere experience to bring them the advancement they covet are likely to be disappointed. A liberal academic and professional training will be needed. We should have an increasingly larger number of men qualifying themselves in higher institutions for this life of leadership and service and fewer waiting in the ranks for a fortuitous turn of the wheel of fortune to give them the promotion they seek. We should have more men with visions, ideals, knowledge and skill ready to take our places as we fall by the way. Every time we as a cult require the newcomers to be better trained than we, we lift the standard of teaching and increase the respect and appreciation the world has for us. The College of Education considers it one of its great obligations to provide training for men and women who propose to qualify for this life of leadership. It believes that the hope of the country may rest with the common schools, but that the hope of the common schools rests with the supervisors and administrators.

It is because of this conviction that courses are offered in administration dealing with questions relating to revenue, retardation, elimination, acceleration, the progress of children, the relative difficulty of subjects of study, program making, promotion systems, gradation systems, salary schedules, school extension and community relationships.

We regard supervision as distinctly professional and educational, while administration relates more to the control and management of the institution. Supervision demands special powers for dealing with human factors at close range; administration demands executive capacity and skill, which may be exercised at long range.

One of the great duties of the supervisor is that of laying out and prescribing material and methods. Without any great stretch of the imagination one might contend that this is a function of school organization. Nevertheless, it is a matter of daily concern for the supervisor. He is constantly working with the courses of study. Whenever a new subject clamors for ad-

mission, the supervisor must consider its adaptability to the various grades and to the different types of mind represented in the school. Moreover, he must arrange it to harmonize with the intellectual development of the children. He must see that neither too much nor too little is given to any particular class. The definitive or prescriptive function of supervision is concerned with four things:

1. The grade distribution of the subject-matter.

2. The time distribution of the subject-matter.

3. The adjustment of the material to the needs of the types of mind represented in the school.

4. A survey of the methods to be employed in presenting the material.

It will be noted that these four things are arranged in the order in which they lend themselves to organization. Subject limits may be prescribed with great exactness but the methods must be left partly to the resourcefulness of the teacher.

Another of the great duties of the supervisor is that of rating or checking of his teachers. Despite the claims of certain educational sentimentalists that it is little short of sacrilegious for a supervisor to judge his teachers, it is nevertheless a fact that that is one of the best excuses for his existence. I do not see how he would justify his existence if he did not think of teaching in terms of efficiency-levels.

The most important duty of the supervisor is that of improving instruction. This is his main problem. It is the one thing that he must keep ever uppermost in his mind. Naturally a judicious rating of teachers plays an important rôle in accomplishing this result. Every visit the supervisor makes, every modification of physical conditions, every regrouping of the children, every device of every kind should have the improvement of instruction as its goal.

In order to modify instruction effectively every superintendent should be familiar with the laws underlying its technique. He should be conversant with lesson types, the special methods of the various subjects, and with the generalized experience of successful men as to the qualities that should be considered in estimating the value of instruction.

Expert supervision, therefore, demands scholarly standards based upon a knowledge of historic and contemporaneous experience supplemented by school-room visitation, before types of instruction may be critically analyzed and properly appraised. From this point of view a supervisor is a critic and his special function is the improvement of the teaching act.

The last of the great duties of the supervisor is a corollary to the third. Every supervisor should be familiar with all the approved mental tests for determining the mental status of children and with the various units and scales for measuring the educational achievement of children. Although the supervisor may not find the time to develop such units or scales, he should, for both scientific and practical reasons, be concerned with their use. They are really impersonal standards for measuring specific aspects of teaching efficiency. Every standard and every scale that may be used to determine more accurately the attainments of pupils or the quality of the teaching, will be welcomed by the alert and progressive supervisor.

These four duties, then, represent the scope of supervision. They represent nodal points in the supervisory practise of any superintendent. At times he must define and prescribe, at other times he must rate teachers, at still other times he must judge and criticize the teaching act, and at still

other times he must use impersonal standards in checking the efficiency of his system.

We expect to inoculate students, particularly those who are destined to enjoy positions of leadership, with these fundamental distinctions and with the content associated with each. We expect to supply them with sane standards for estimating the value of their work and with approved methods for discovering new criteria. This is the second of the great aims which the College of Education will seek to realize.

A third heavy duty devolving upon the College of Education is the training of high-school teachers. Under the rules prescribed by the university and the Department of Public Instruction certain requirements are set up for those who propose to become teachers in high schools. The great majority of the students coming to us to be prepared for this work are young and inexperienced. They have never considered teaching from the viewpoint of the teacher. They do not appreciate its opportunities or understand its difficulties.

Because of the system of honor credits now in vogue in the university only students of good ability can qualify for work in education. We are assured of a select group. In addition to the academic subjects in which they must attain a marked degree of proficiency, these prospective teachers are required to earn fifteen credits in education, three of which must be in practise and observation. Practise and observation facilities are afforded by the university high school. Arrangements have also been made with the city school authorities of Minneapolis to provide for practise work for a limited number of students.

Our present high-school faculty is composed of persons of recognized skill as teachers. They were chosen because of their peculiar fitness and expertness in their respective fields. Their training, experience and general ability are such as to make the present high-school corps compare favorably with any university high school in this country. We believe that the teachers in a university high school should be serious-minded and professionally inclined educationists. They should have had enough advanced training to have caught something of the spirit of the scholar in their respective fields and they should be thoroughly well-informed as to the principles of education.

One of the duties of the high-school teachers is to make the students who come to us appreciate the tremendous significance of the high school in American civilization. Many of the students do not recognize that the high school has become a great institution of working learners, that the abilities it seeks to develop are of every worthy sort; executive as well as scholarly; artistic as well as scientific; concerned with the work of the world as well as with a noble use of leisure; concerned with the work of women as well as with the work of men. Nor are these students familiar with the fact that coincident with the modification of aims of the high school, emphasis in instruction has shifted from the mass to the group, from the class to the individual, from the transmitting of vicarious experience to more direct face-to-face experience, from a single appeal to a variety of appeals. They do not know that new administrative units have been created through the introduction of medical inspection, dental clinics and nursing, and through the supervision of the recreational activities of children. They do not realize that the program of studies designed originally more for the professions and the leisure enjoyments of life now trains in many instances for specialized industry as well. Nor are the students as conscious as they should be that the activities of the school have been ex-

tended to include the interests of adult men and women, and that the school plant has been opened all hours of the day and evening to serve the needs of the community.

We shall regard it as quite an achievement if we are able to make our students sensitive to such problems and changes as these. In no other way can one appreciate the tremendous significance of the high school as a powerful agent of popular education. In no other way can the student understand how an institution which fifty years ago was fixed in its structure, authoritative in its nature and dominated by memoriter methods has become flexible in its organization, democratic in its nature and dominated by a spirit of reverence for the individuality of children. Our high-school faculty and the members of the Department of Education are attempting to define the principles back of these shifts of emphasis and to determine the value of the materials of the high school in terms of their social outcomes.

In addition to these problems, which we regard as of primary importance, we are also trying to familiarize our students with the details of school-room routine and with the technique underlying class-room instruction. So much disagreement exists among high-school teachers with reference to these matters as to make our problem exceedingly difficult. Most of the controversies relating to secondary education are founded upon the exploitation of special aspects of organization and management. Only now and then is there an attempt to discuss organization and instruction in terms of principles. No institution could possibly satisfy all the requirements now being fostered by the high-school authorities. No training school could possibly prepare its product so as to insure its success in every special situation. Adjustment of new teachers to local conditions is the special duty of those in charge of the school employing the new teachers. But every training school can increase the adaptability of its graduates, every training school can give its graduates principles which will serve as criteria for determining practise when new crises arise. And in addition every training school can see that its students have acquired a reasonable degree of skill in the modes of accepted instruction in those branches which they propose to teach. Consequently we require our candidates to plan and teach lessons representing the different types of instruction: drill lessons, inductive and deductive lessons, study lessons, appreciation lessons, examinations and reviews. We permit them to observe model lessons representing each of these types taught by our university high-school teachers.

It should be said that the university high school is a typical high school. "Flunkers" from other institutions are not permitted to enter it. Over-age students are now denied admission, and students who desire to "brush up" on one or two studies for the purpose of carrying them in the university are not permitted to enter. We are not running a preparatory school to the University of Minnesota. We are conducting and plan to continue to develop a typical American high school in which any normal student may secure a liberal secondary education or secure special training in some of the trunk lines of industry. Our high school, as far as its facilities will permit, is a model training school, and not an experimental school. It is for the use of our students.

Another large problem with which the critic teachers and the faculty of the College of Education are concerned, aside from informing the recruits we get in the methods and subjects they are to teach, is that of developing a craft spirit. We real-

ize that teaching, except for a few, is not dominated by professional ideals. And moreover we know that the motive with which one enters teaching bears a close and high relation with his efficiency later. We realize that the best we can do will be none too good. We would warn school authorities from expecting too much from any teacher-training agency. No institution can create ability, no institution can endow its students with common sense, no institution can supply students with a specific for every emergency they may meet. Some of our students will fail in spite of the best we can do, but most of them should be better teachers because of the work they have had with us. No normal school, college of engineering, or college of education should be judged by its failures. We do not judge one's ability to use language by the mistakes he makes but by the correctness of his speech. We do not judge a teacher's ability to govern by the frequency with which cases of discipline arise, but by the absence of cases of discipline. Similarly every institution in the long run should be judged by the number who succeed. As a class of people we are all too prone to reason by the exceptional case, and that of course is always inimical to the best interests of the institution. The College of Education proposes to send out into the field each year a body of recruits well prepared both academically and professionally for teaching. And moreover we hope to improve the quality year by year. To do this we need your sympathetic cooperation, support and frank criticism.

The College of Education hopes to serve the interests of the school people of the state by the constructive work it proposes to do. A project which is likely to be of very great value to the teaching force of the state is the bureau of cooperative research, which is being established this year for the first time. It is well known that the literature bearing upon the use of units and scales for measuring educational results has been multiplying at rapid rate. Comparatively little has been done thus far with the actual classroom use of this material. We propose, if it meets with favor, to cooperate with teachers and other school authorities in actually testing out and applying these to the schools of the state. We further propose when the individual reports have been sent to us to collate the material and to publish a report for free distribution to those who are members of the bureau. In this way we hope to establish Minnesota standards in each of the school branches. A plan of this sort will entail some extra work for a time upon all those who cooperate, but it should result in some very definite supervisory and teaching standards. The students whom we send out will be made increasingly familiar with these measures of achievement, and there should come in the course of a few years a generation of teachers who are not merely informed as to the standards but who are inoculated with ideals and practises of modern education.

Now, finally, I should like to call your attention to the fact that the College of Education has four hundred and twenty students enrolled in its courses on the campus and two hundred and thirty-two in its extension and correspondence courses, making a total of six hundred and fifty-two in all. Much as we should like we can not take the time to secure the natural history of all of these, but plans are now under way which will insure more intimate personal contacts of faculty and students.

In this brief discussion I have attempted to describe only a few of the things to which we are directing our attention. We

are working at our special problem as intelligently and as industriously as we can. We do not want any support to which we are not clearly entitled. We ask for no faith in us that is not founded on "good works." We want your support when we deserve it, and your criticism when you have a case. Your cooperation is always desired. Whenever the College of Education is made conscious of a real need it will try to satisfy it. It is not its business to inspect schools or to dictate policies but to train teachers. Our faculty believe that there is no calling so worthy of exaltation as teaching and to that end they will contribute all of their strength and energy. This program we believe the board of regents and every intelligent citizen of the state will approve. We invite every professionally inclined teacher of the state to help us solve our problem, to realize our hopes, to make the College of Education in the University of Minnesota a place unrivaled for the stimulation of healthy educational thought, the training of persons for leadership in the field of education, the development of a craft spirit, and the inculcation and wise application of the principles and ideals of successful instruction.

Lotus D. Coffman
University of Minnesota

THE ELIMINATION OF WASTE IN THE TEACHING OF HIGH-SCHOOL SCIENCE[1]

The subject of this address is not one of my own choosing, but it is one which I am particularly glad to have had assigned to me, for it seems to me to raise one of the most vital problems in modern secondary-school education—namely, the problem of finding how to so organize the work of the high school as to find time, amid the ever increasing diversity of subjects included in the curriculum and the ever growing content of each subject, to give to the student who can take a full high-school course such thorough and consecutive training in the fundamental sciences as a high-school graduate ought to have—such a training too as the corresponding student in practically every civilized country except our own actually gets. It is a problem which, as I see it, has scarcely yet been touched at all in any constructive way in America, and yet one which insistently demands solution, and one which must find solution very soon.

I am quite aware that it is not the physics teacher's *individual* problem, and hence that it may seem out of place on the program of the physics section. Indeed I am not sure that your committee did not intend that I should devote my time to a discussion of the elimination of waste in the present high-school physics course. But I choose to take what seems to me a much bigger problem—one in which there is less likelihood of my setting up and then knocking down a straw man—one which lies closer to the roots of our whole American educational system and which is, therefore, worthier of the best effort of the most able teachers.

The methods of teaching our present third or fourth year course in physics have been dissected and redissected in this section for the past fifteen years until, if we are not all in agreement about every detail, we at least know what are our differences. Furthermore, when we once get behind our party shibboleths and ask how our theories actually work out in practise, we find that the differences are surprisingly small. How small can best be realized by taking all the physics texts which have been written since, say, 1906, skipping all the prefaces and shunning all the articles which have

[1] A paper presented before the Physics Section of the Central Association of Teachers of Science and Mathematics, November 26, 1915.

been penned by their authors and comparing the books themselves; or, better still, by watching the actual conduct of classes using these various texts. These books will, of course, show the author's individual characteristics; they will show differences in style, in lucidity of statement, in freedom from errors, in order of arrangement, in up-to-dateness, etc.; but the most striking thing about them, after all, will be their fundamental similarity. And the reason is not far to seek. It is simply this. The nature and the present state of development of the subject, together with the time available and the dictates of experience prescribe somewhat closely the main lines of procedure in teaching a year course in physics in the third or fourth year in the high school. Not that I wish to imply that the last word has been said even in this narrow field, and much less, that most teachers of physics can not learn very much more than they now know, or, at least, than they now practise about the teaching of physics. But however good the opportunity for individual improvement may be, the fact is that the field about which I am speaking has been worked over so many times by so many able men for so many years that adding anything of value just now is about as promising a task as increasing perceptibly the area underneath an equilateral hyperbola by moving out far along an axis and annexing the space between it and the asymptote.

I shall not, then, waste your time this afternoon in attempting to show how we can save two minutes on a specific gravity experiment, or two hours over the derivation of a lens formula. I wish rather to raise the question as to why we have a one-year third or fourth year physics course at all, and to ask some other fundamental questions as to the relationships of the sciences to one another and to the whole high-school program.

As an introduction to these questions, let me present a situation. For the sake of concreteness, I am going to take one which is very close to me. I have a boy who is just entering the high school, a boy who, I think, is typical of a very large group which I have primarily in mind in writing this address. I have been looking ahead in the endeavor to plan this boy's high-school course wisely. There are just sixteen units which he can take in his four years. Of these, three must be in English, and I know of no one who would diminish that requirement. Five, at least, are to be in a foreign language other than English. This can not be reduced for one who would take Latin, as I want my boy to do, and it ought not to be reduced for one who does not take Latin. Two, at least, must be in mathematics, again an irreducible minimum. No one would think of putting in less than one unit of history, which is indeed specifically required in most schools. One year of hand work is prescribed and one year of physical education, thus making a total of thirteen. This leaves a possible three units of other work, and the sixteen units is full. At the most, then, this boy can get in but three units of science. And if he wants more than one single unit of history, or more than two of mathematics, or if he wants any civics or more than one unit of drawing or shop, or if he wants cooking or typewriting or any other of the myriad, newer, "necessary" ingredients of an education, he must get them either out of these three units reserved for science, or else out of the five units for a foreign language. As a rule, the average student does want one or another of these things, and the tabloid form in which the science is at present administered makes it the easiest subject to slip off the educational platter, and

so the three possible units reserved for science are generally cut down to two or less. From what I can learn from inquiry among my acquaintances familiar with high-school conditions, I judge that our estimate is very liberal if we say that the average graduate of the high school has had as much as two years of science. Mr. C. H. Smith tells me that in the Hyde Park High School, where statistics have been kept, the average is between one and three fourths and two units. In the University High School, I was told last week that it was probably less than one and one half. And this is not at all because the science courses are uninteresting in these schools. Principal Johnson tells me that last year in the University High School the student vote on the subjects which had been "very much enjoyed" ran: History, 67 per cent.; science, 66 per cent.; French, 63 per cent.; handwork, 56 per cent.; mathematics, 49 per cent.; German, 47 per cent.; Latin, 45 per cent.; English, 43 per cent. In the Hyde Park School they ran thus: English, 63 per cent.; French, 61 per cent.; science, 59 per cent.; history, 53 per cent.; German, 52 per cent.; mathematics, 52 per cent.; Latin, 41 per cent. So that science in both these schools was well up toward the top, and I know of no reason to suppose, in spite of all the lugubrious talk which is heard about interest in science, that this is not a perfectly general situation. In the Englewood High School, 80 per cent. of all graduates have elected Mr. Tower's physics. This whole "interest" question in science is one with which I have so little patience that I shall dismiss it with the single remark that any teacher who doesn't make any science interesting hasn't any excuse for being a teacher at all. Science is pretty nearly the only subject in the curriculum which you can scarcely help making interesting, no matter how badly you teach it. The fact that science does not enter more largely into the average student's course has not in my judgment anything whatever to do with *interest*. It is due chiefly, I think, to an administrative situation, to the crowded nature of the curriculum, to the mistaken shoving over of the sciences to the later years of the course, and to the fact that we have not tied them together into a whole but have kept them in pellet form so that they have been especially easy to crowd out. Like so many other unfortunate American situations, it is due, I think, chiefly to lack of intelligent organization.

But the fact that a student taking a normal high-school course can scarcely get in more than three units of science, while the average which he does get in is probably less than two, raises two very vital questions. These are

1. How can the time which now seems actually available for science in the high school be most effectively utilized?

2. Can another scheme of science instruction be developed which will give more adequate scientific training to our high-school graduates?

The first question answered itself very quickly for my boy because his mother, who is an ardent classicist, but withal a very efficient and practical person, handled the case in the omnibus capacity of judge, jury and executioner. The trial ran somewhat as follows: "How many units of science can he take, anyway?" Answer, "At most three!" "Very well, that settles it. I took primarily Latin and Greek, but I found time for physics, chemistry and biology, because every intelligent person ought to know something of those three subjects. The need is just as strong now as it used to be, so those are the boy's three science units." "But," said I, "general science is a possibility." "But will he not

get all that in his three fundamental sciences, and in just as interesting and in much more thorough and useful form? Then, why waste the time on general science? Besides even if that be good, it is a choice between the good and the indispensable. Which of the fundamental sciences shall be replaced by the general science?" And the sentence was pronounced.

Now a mere academic person like myself could have argued the matter at indefinite length—and in fact, I did sit for a good part of a year at bi-weekly intervals with a group of savants and discuss this very question—but I am sure that most, if not all, of you will agree that the above judge stated the simple commonsense of the general-science situation. In fact, I have never known any one who had given the subject careful study who felt that the general-science course was in any way an ultimate solution of our high-school science problem. This conference which I have just mentioned felt that the place of the general-science course was in the grades. Dr. Judd has often expressed to me the belief that it belongs farther down. My friend, Professor Caldwell, joint author of one of the general-science texts, which, as a matter of fact, I myself had some share in getting started, believes that its destination is the first year of the junior high school. But this junior high school science will have to be something quite different from the present general science course. Nevertheless, the general-science course even in its present form does seem to me to fulfil a useful function, for with the increasing diversity of our school problem, with our domestic-science courses, and our agricultural courses and our two-year course, and our vocational courses generally, there are quantities of students who can not take more than a single year of science, anyway. For such the present general-science course seems to me suitable. It does not seem to me to be suitable for the student who can have the advantage of a full high-school course unless he has a year of time to waste, and it is this continual wasting of time in our lower education which has already put the American boy two years at least behind his European brother. This waste could perhaps be eliminated partially with a general-science course in the first year of the high school if we were to reconstruct entirely the courses in the individual sciences and build them all upon the first-year science course. Such a reconstruction seems to me neither practicable nor desirable, especially since I think the result aimed at can be accomplished much more easily and much more naturally. Particularly undesirable and ill-advised seems to me legislation requiring all first-year students to take first-year general science.

This brings me to the second and more vital question, for it deals with the possibility of a constructive program. And here I am speaking in part, though not entirely, as an outsider and a theorist. Your judgments will here be as good as or better than mine. I wish to urge, however, some general considerations which, coupled with your experience, may possibly lead to some real advance.

Let us begin with a comparison of American and European secondary education in science. A few months ago I was asked to pass on the credentials of a young Dane who sought entrance to the University of Chicago. He came from a gymnasium in Copenhagen and brought with him his schedule, which I carefully examined. In science, it had been as follows: In the sixth year from the end, *i. e.*, at the average age of twelve, the students in this school had begun simultaneously physics, chemistry and botany. They had physics for five

straight years, three hours per week, chemistry for five years, one hour per week; botany for fours years, one hour per week. Zoology began in the fifth year from the end and continued for five years, two hours per week. My Danish informant told me that this was the uniform schedule in all Scandinavian countries. This schedule relates, I suppose, to the "real" gymnasium. However, a young friend of mine who is a graduate of one of the German classical gymnasia informed me last month that even in these conservative schools all pupils start at about the age of twelve with physics, chemistry and biology and cover in several years fully as much ground as is covered in our best high schools in courses in these three subjects. The text-books used in these schools I have studied somewhat carefully myself. They correspond quite closely with ours. Most of them develop the subject in essentially the way used in our standard texts. I have examined, too, the French elementary texts in physics and find them more complete and more difficult than ours. I am told by those who should know that the science instruction in France is even more thoroughgoing than in other countries in Europe.

At any rate, there can be no question about the essential correctness of these main facts:

1. In all European countries there is universal recognition of the fundamental importance for all students of thorough training in all three of the subjects, physics, chemistry and biology, with the strongest emphasis thrown upon the physics.

2. Instruction of about the same difficulty as that given in our secondary school is begun in all three of these subjects at about the age of twelve and homogeneous groups pursue these studies in parallel through from three to five consecutive years.

3. There is probably no highly civilized country in the world in which the average student is not given more thorough training in these fundamental sciences than he is given in the United States.

Now I should be the last person in the world to urge that everything is good because it is European. The world's European ideals as to both men and institutions are to-day lying in the dust. Men and nations whom we thought great and glorious have proved themselves, in some respects at least, to be pitifully ignoble and unworthy. Nevertheless the universal experience of the European nations in the matter of the teaching of the sciences may yet have a lesson for us, particularly if the procedure suggested by it shows itself upon analysis to be based upon sound principles.

Now the first of these principles which seems to me absolutely sound is that physics is a science which is as well adapted as any science, perhaps better adapted than any science, to arouse the interest and to appeal to the understanding of the child of from twelve to fourteen years of age. Why have we in the Chicago schools pushed it off into the fourth year? I can not conceive of a worse place for it. Logically it unquestionably comes first. Well-known educators, Dr. Judd among them, have repeatedly expressed the view that it ought to be first. Those interested in the pedagogy of mathematics have repeatedly urged that physics precede or accompany the mathematics, so that the former's wealth of material might be available for illustrative purposes in the latter. But since the biological sciences now actually do precede in the United States, and since, further, the advantage claimed for general science of coordinating the different sciences can be gained just as well and without any waste at all by teaching the three separate sciences in parallel, what I

want to urge is not the European plan of stressing physics, but simply the European plan of a continuous three-year science course in which physics, chemistry and biology shall be taught in parallel, say, each two hours per week.

What are the objections to such a plan and what is to be gained by it? Let us take the objections first. It has been urged that the physics should come late in the course because the student needs his mathematics in order to help him in his physics. This contention has always seemed to me untenable. There is no mathematics needed in elementary physics even as it is now taught, except the simplest algebraic equations with one unknown, and the single geometrical proposition of the proportionality of the sides of similar triangles. Last year I had an eleven-year-old boy in the eighth grade of the public schools (the Ray School) and I found that, entirely unbeknown to me, he had been taught in his grade work how to handle similar triangles, and that he was actually solving problems with their aid. I found too that he was solving algebraic equations with one unknown. At the present time, then, all the rudimentary mathematics needed for high-school physics is being taught in the grades. If it were not we could teach it in connection with the physics in an extra half hour of time.

Having always believed that we pushed off the physics to too late a period, I began this fall an experiment on this same boy who was then just entering the high school. He had just passed his twelfth birthday and was, therefore, from one to two years younger than the average first-year high-school boy. Under normal conditions I would have preferred to put him with a class in physics of his age and advancement, but, no such class being available, I put him into a class of seventeen-year-old boys in the third year of the high school. This boy is in every way a thoroughly average, careless boy of twelve, who gets an average grade of B. He has been making thus far just his average grade of B in this physics. I have watched him carefully, but have helped him not an hour thus far, all told. He is now beyond the subject of "falling bodies," the hardest subject in physics, and has had no difficulty whatever which is due to his years or lack of preparation, not a quarter as much difficulty as my thirty- or forty-year-old pupils in the summer have in elementary physics because of their years. I am greatly pleased with the way in which the experiment is working in this one case. The boy is at the age at which his interest in and appreciation of the facts of physics are most keen, and the possibility of teaching and driving home a little elementary algebra through it is fascinating.

But why should not this experiment work? This is not the first time it has been tried. That the age of twelve or thirteen is a suitable one at which to start a boy in physics is not at all a theory. It is not merely my individual experience. It is the universal experience of European schools. For that matter, the first part of the course in general science, so far as I have been able to observe, is merely a part of the physics course taken over into the first year. The fact is there is every reason for beginning physics as early as possible in the high-school course and no valid reason for not doing so.

A second objection to the proposed plan is that it might be difficult to administer because of irregular students and transfers between schools. And here we come to the very heart of the question. Here we strike what seems to me the weakest spot in the whole system of secondary education in the United States. In Europe, con-

tinuity, thoroughness, and a well-trained efficient product are secured because the whole course is planned for the regular, normal student. Here, too often, every sound pedagogical principle is sacrificed to the convenience of the irregular, abnormal and inefficient student. Why should we put up our science in tabloid doses just to make it as convenient as possible for any student to begin at any time he wants to, to take just as many tablets as his convenience or his whim suggests, and to stop taking at any time without suffering the slightest conceivable inconvenience? Why should we not rather plan a consecutive three-year science course for students who plan to take a full high-school course, even if irregular students should suffer some trifling inconvenience because of their irregularity? With the cooperation of schools between which transfers are most likely to be made it could be done with almost no inconvenience or loss due to transfers, anyway. No new texts are needed at the start, for the courses in the individual sciences need not differ essentially from those now given. They would simply be taught in parallel, and for the sake of gaining the element of coordination which is urged for the general science, it would be desirable that all three sciences, physics, chemistry and biology, be taught by the same teacher or teachers or at least under the immediate supervision of one head science teacher. Of course there would be some omissions from the present texts and ultimately some reconstruction of the present courses, but no very radical changes are needed.

Now let us enumerate some of the advantages of such a plan:

1. Most students who took science at all would have a continuous, systematic, progressive three-years' course in the fundamental sciences—a result which would be welcomed, I think, by practically all educators, whether scientists, classicists or philosophers. Students might, of course, drop out after one or two years, but if they did so they would know that they had not finished their first course in any one of the sciences. They would not be encouraged to think that they had completed their scientific education because they had had the equivalent in some one subject of Steele's "Fourteen Weeks."

2. Pupils would begin both the physical and biological sciences at the very beginning of their high-school course at the age at which their minds are most alert and eager for such work.

3. The utterly ridiculous situation of the most fundamental of the sciences being pushed off to the last year of the high school would be at an end, and this change would have been made not at the expense of biology, but greatly to its advantage, for

4. The physical and biological studies would supplement each other through three years of the pupil's growth and all the advantages now claimed for general science would be gained without the loss of a year of time and without the necessity of a reconstruction of courses in the individual sciences which decades of trial and elimination and addition in both Europe and America have brought to their present form.

5. The advantage to mathematics of being taught to students who were having or had had enough of physics to make its concrete imagery available for the mathematics course would be very great.

6. The days of tabloid science would be at an end and one of the chief evils of American education in science, namely, lack of any intelligent organization, would have been corrected. The work of the individual teacher in the better schools in this country seems to me to be in no way inferior to the best work in Europe. The

element in which we are hopelessly behind is organization.

I realize, gentlemen, that this is a big problem—that is what makes it so interesting and so worthy of your best efforts. I realize too that it is not your problem alone, for you are helpless without the cooperation of principals and superintendents, but if you will go to them with a constructive program, I think they will lend a willing ear. I realize too that one man and one school can not swing it alone. But if it is worth doing then the science teachers of a city like Chicago are big enough to put it through. Is not an experiment of this kind at least worth trying in the United States?

R. A. MILLIKAN
DEPARTMENT OF PHYSICS,
UNIVERSITY OF CHICAGO

EDUCATIONAL EVENTS

MILITARY DRILL AT THE UNIVERSITY OF WASHINGTON

COMPULSORY military drill for all male students during their first two years of residence at the University of Washington will continue as a part of the curriculum. The faculty, acting for the first time on the matter after a deliberation of several weeks, expressed its will at the January meeting, voting 68 to 27 in favor of the report of the committee which recommended continuing the work of the cadet corps as at present organized. Many of those voting against the report were not opposed to drill, in itself, but disliked compulsion.

Twice the state legislature imposed compulsory military training upon the university by attaching a rider to the appropriations bill. At the last session, however, no mention was made of drill, and the authorities at the university deemed themselves free to consider and decide the question of abolition which had been raised by interested parties within and without the institution.

A committee of seven members of the faculty held sessions extending over a period of eight weeks, and received the representations of various societies, individuals and political parties who ranged themselves for and against compulsory drill. In the end the members of the committee issued their report, five favoring retention of drill, one urging abolition and one believing the student should be free to decide whether he would take the course.

The majority of the committee felt sure that compulsory drill is not a factor in encouraging militarism. In fact, it quoted figures to show that military training in universities tends, in some degree, to reduce the number of college men enlisting for service in the army. This was attributed to an awakened sense of the seriousness of warfare. It was held, however, that the training tends to make the college man an efficient unit in the scheme of preparedness, and capable of rendering able service in the eventuality of war. They believed the disciplinary value of the training high, and argued that improved posture, habits of promptness and neatness would result from drill.

Members of the faculty who were opposed to the committee's report held that the university should, if it chose to aid in preparing the nation for times of peril, give instruction in such subjects as military engineering, military chemistry and the study of defense rather than in infantry tactics. Drill, they asserted, was of little value as an exercise; of doubtful disciplinary virtue; expensive for the student, both as to time and money invested in equipment; and inefficient from a military standpoint.

CORRESPONDENCE STUDY IN MASSACHUSETTS

MASSACHUSETTS is now ready to begin teaching by mail and the first bulletin of the Correspondence-Study Division is ready for distribution. According to the Boston *Evening Transcript* the opportunities for this new extension department are almost limitless. One of the most interesting proposed pieces of work is the course in civics for new Americans. There are thousands of immigrant wage earners in Massachusetts who do not have the opportunity to receive instruction in citizenship in the elementary requirements for naturalization. The recent immigration commission of Massachusetts pointed out this need as being urgent.

Further proposed activities for the department include instruction in classes under a regular instructor; training classes for teachers for foreigners; visual instruction by lantern slides on circuits; rural welfare work and promotion of social center activities; debating reference bureau; traveling exhibits, including public health; good roads, safety methods and devices, and homemaking, which might include heating, lighting, cooking and decoration; short courses in highway construction, industrial management, electric wiring, etc.; and possibly municipal research, giving information regarding lighting of streets and public buildings, paving, smoke problem, heating and ventilating.

James A. Moyer, director of the department, and his corps of assistants are now ready to receive enrolments and start instruction. Civic associations, men's clubs, school officials, libraries and other organizations are invited to cooperate in bringing this service to those who need it.

The bulletin announces sixty-six correspondence courses offered to residents of Massachusetts. The list includes:

Elementary English; English Composition A; English Composition B; English for Americans of Foreign Birth; Commercial Spanish; Elementary United States History; United States History A; American Government; Civics for Americans of Foreign Birth; Elements of Economics; Sociology; Money and Banking; Practical Mathematics; Practical Mechanics; Advanced Shop Mathematics; Elementary Algebra; Elementary Geometry; Advanced Algebra; Trigonometry; Bookkeeping; Commercial Correspondence; Industrial Accounting; Industrial Management; Retail Selling and Store Management; Shop Sketching; Mechanical Drawing; Architectural Drawing; Descriptive Geometry; Freehand Drawing; Practical Machine Design; Practical Steam Engineering; Gas and Oil Engines; Automobiles; Heat; Fuels; Steam Boilers; Steam Engines; Steam Turbines; Heating and Ventilating; Power Plant Economics; Testing of Power Plants; Locomotives; Refrigeration; Heating and Lighting for Janitors; Practical Electricity; Dynamo-Electric Machinery; Theory of Alternating Currents; Electric Traction; Electric Transmission; Electric Wiring; Materials of Construction; Lumber and Its Uses; Concrete and its Uses; Strength of Materials; Elements of Structures; Highway Engineering; Plumbing; Reinforced Concrete Construction; Hydraulics; Home Furnishing and Decoration; Study of Fabrics, and Dietetics.

THE ALBANY STATE COLLEGE FOR TEACHERS

The registration of students shown by the new catalogue just issued shows an increase of 201 students over the college year 1914–15, an increase of 30 per cent. The catalogue carries 1,063 names, 871 students in regular course, and 192 students in extension courses. The faculty number 16 professors, 4 assistant professors, 29 instructors, and 6 assistants.

The extension courses are a new departure at the state college for teachers. They are given for the benefit of teachers in service. Any city where twenty or more teachers unite upon a course of instruction can secure the services of a member of the state college faculty. At present the following extra-mural courses are offered. In Troy, courses are given in English, Latin, education; in Schenectady courses are given in English and sociology. In the two cities a total of 103 teachers are enrolled. These extension courses are given under the following rules. Any teacher may enroll. Those teachers who can satisfy the regular college entrance requirements may apply the credit earned towards the college degree. Each course has assigned to it 2 credits so that the completion of 32 courses will earn graduation. A fee of $6.00 for each credit is charged and no courses are given to less than twenty teachers.

The college faculty was placed upon a firm basis by the action of the board of trustees. On recommendation of President Brubacher, full professorships were established in Latin, English, mathematics, physics, chemistry, biology, history, political science, economics, philosophy, education, secondary education, industrial education, business administration,

French and German. Assistant professorships were established as follows: two in industrial education and one in English. Instructors are the next grade and assistants the lowest grade. Salaries were established as follows: Full professors have a minimum salary of $2,500 and may go to $3,500; assistant professors have a minimum of $1,800 and may go to $2,400; instructors have a minimum of $1,000 and may go to $1,700; assistants' salaries depend upon the amount of work assigned. For full time service the salaries are from $800 to $1,000.

EDUCATIONAL NOTES AND NEWS

DR. J. T. KINGSBURY will retire from the presidency of the University of Utah at the close of the present academic year. The difficulties at the University of Utah, which led to the resignation of seventeen members of the faculty, will be remembered. Volume I. of SCHOOL AND SOCIETY contains full details, including a criticism of the administration by Professor F. E. Holman, lately dean of the Law School, a reply by President Kingsbury and the findings of the committee of enquiry of the American Association of University Professors.

DR. HENRY SUZZALLO will be formally installed as president of the University of Washington on March 20 and 21.

D. H. CHRISTENSEN, for the past fifteen years superintendent of the public schools of Salt Lake City, has announced to the board of education that he will retire from educational work at the close of his present term of office next June.

THE January number of *Studies in Philology*, a quarterly journal published by the language departments of the University of North Carolina, which is now in press, will be a memorial to the late Charles Wesley Bain, of the Greek department of the university. Among the contributors to this number are Professor B. L. Gildersleeve, of the Johns Hopkins University; Professor W. P. Trent, of Columbia University; Professor Charles Foster Smith, of the University of Wisconsin; Professor J. F. Royster, of the University of Texas, and Professor George Howe, of the university Latin department.

JOHN OREN REED, professor of physics in the University of Michigan and until one year ago dean of the college of literature, science and arts, died on January 22, aged fifty-nine years.

JOSEPH D. ARMSTRONG, of Whitestone, L. I., a graduate of Columbia College in the class of 1915, will be the next Rhodes scholar at Oxford University from New York.

MISS MARY J. SMITH, who was dismissed for "pernicious political activity," has after two weeks been reinstated by the Cambridge school committee.

PROFESSOR S. H. DADISMAN, of the department of agricultural education at the Iowa State College, has been elected head of the Agricultural School of Bolton College. Professor H. H. Gibson, head of the department of agriculture of the Kearney, Nebraska, Normal School, has taken the work at the Iowa State College.

ARTHUR J. JONES, Ph.D. (Teachers College, Columbia), professor of education at the University of Pennsylvania, is organizing a department in the history of education at Swarthmore College. Since the new department of psychology and education was organized at the college, over one hundred students have completed the professional requirements of eighteen college hours or more with from six to twelve weeks of practise teaching in the high schools of the community.

PROFESSOR JAMES FLEMING HOSIC, head of the department of English in the Chicago Normal College, was recently engaged by the board of education of Indianapolis, Indiana, to inspect English work in the elementary and high schools, to hold conferences with principals and teachers, and deliver a series of educational addresses. The principal topics of these addresses were: The Basis of Method in Teaching the Modern Point of View in the Teaching of English, Cooperation between the Teacher of English and other Teachers and Economy in English Teaching.

Professor E. A. Loew, lecturer in Oxford University, gave a series of lectures before the Philological Club at the University of North Carolina, on January 25, 26 and 27. Professor Loew also delivered two popular lectures: "How the Classics Came Down to Us," and "The Art of Ancient Bookmaking."

The 207th regular meeting of the Schoolmasters' Association of New York and Vicinity was held at the Columbia University Club, on January 22. The address was by Philip Marshall Brown, professor of international law at Princeton University, on "Possibilities of Diplomacy."

The Bryn Mawr graduate school is to lose the services of the head of its department of education, Dr. Kate Gordon, who goes next September to the Carnegie Institute of Technology at Pittsburgh. Dr. Gordon will devote a portion of her time to the Bureau of Mental Tests, which aims to be of help to students in the selection of their courses and in the efficient prosecution of their studies. She will give instruction in psychology to students in the women's college, and will also teach psychological esthetics to students in the school of applied design.

Thomas Walter Swan has been elected professor of law in Yale University and dean of the law school. He was associated with Professor Beale of the Harvard Law School in organizing the law department of the University of Chicago and has since been engaged in private practise in Chicago. He will succeed Professor Henry Wade Rogers, as the latter's work as judge of the United States Circuit Court makes it impossible for him to continue the administrative duties though he will retain a professorship in the law school. Three instructors in the college were promoted to assistant professorships as follows: Lawrence Mason, '04 and '13 Ph.D., English; Raymond Thompson Hill, '04 and '11 Ph.D., French, and Henry Laurens, Ph.D., a graduate of Harvard University, biology. In the medical school, James Alfred Honeij, M.D., Tufts, '08, has been appointed assistant professor of medicine in charge of radiology. He has been connected with the X-ray department of the Boston City Hospital and has recently been acting as special investigator for the state of Massachusetts of the Leper Colony at Penikese Island. A new instructor in English appointed for next year is Thomas Lawrason Riggs, '10, of Washington, D. C., who is at present a student in the Harvard graduate school.

Amherst College has received $250,000 for a library building as a memorial to an alumnus from his brother, the names not being as yet announced.

Wellesley College has received $150,000 towards a fund for a new administration building from a graduate whose name is withheld.

The raising of a fund of $3,000,000 as an addition to the endowment of Cornell University will be one of the chief aims in connection with the semi-centennial celebration of the university as planned by the board of trustees. Three days, starting October 6, 1918, will be devoted to the celebration. October 7, the second day, has been selected for the chief events in view of the fact that exactly fifty years will have elapsed at that time since the first class entered the university. The unveiling of a statue of Ezra Cornell, the founder of the university, by Andrew D. White, counsellor of Ezra Cornell and the university's first president, will be a feature of the celebration.

Plans are under way for the construction of a new dormitory on the Princeton campus, the money for which is to be given by the classes of 1902 to 1912, inclusive. The new building, which is to cost $220,000, will contain 86 single rooms and 56 double rooms. The sum of $70,000 has already been raised, and as soon as the amount has been increased to $100,000 work will be begun.

A "plan for the development of the University of California Medical School" has just been formally adopted by the regents of the university as a policy to be worked toward. The University of California has now increased to a total of $162,221 per annum its

expenditures on medical instruction, over and above the hospital receipts, and within the next few months it will complete the erection, at a cost of $615,000, of a new 216-bed teaching hospital. The regents have now outlined as the immediate future needs of the medical school, a new laboratory building for anatomy and pathology, to cost $150,000; an "outpatient" building in conjunction with the new teaching hospital, to cost $100,000; a nurses' home for 100 nurses, to cost $100,000; and alterations of the existing buildings on the Parnassus Avenue site in San Francisco to accommodate the departments of physiology and physiological chemistry, to provide proper administrative offices, and space for the medical library.

A CAMPAIGN to raise more than a half million dollars for its endowment fund has been started by the Women's Medical College of Pennsylvania. Its present fund is $490,000, and the plan is to increase it to $1,000,000. Nearly 100 Philadelphians, prominent in the medical, business and social worlds, have become members of the committee in charge of the campaign. The additional endowment, which is being sought, would be distributed as follows: $260,000 for increased salaries and equipment; $100,000 to endow the department of pharmacology; $75,000 for the department for diseases of children; $50,000 for additional scholarships, and $25,000 for current expenses.

JAMES J. PENNIMAN, brother of the vice-provost of the University of Pennsylvania, has recently presented to the school of education a pedagogical library, which is now being installed on the shelves of the library. The gift is a memorial to the donor's mother.

THE San Francisco Girls' Union has given $5,000 to the University of California to endow a scholarship for a woman student.

WILLIAM STANISLAUS MURPHY, a Harvard, '85, man, who has died leaving no heirs, has given his property by will to Harvard College, the income to provide scholarships for men bearing his surname. It is estimated that the estate is worth about $35,000. It is stipulated that the income shall be expended for Murphys who are unable to pay for a college education. In case there shall not be enough students named Murphy to take advantage of the bequest, the testator provides that they may be advertised for in the Boston and New York newspapers.

THE Belgian Scholarship Committee has issued a circular letter of appeal for a fund to enable scholars, research workers, literary men and artists of Belgium to resume their work. The committee has already received assurance from the George Washington University, Clark University and the state universities of Missouri and Florida that they will give free tuition to Belgian students. Belgian professors have also been temporarily engaged by Princeton, George Washington, Harvard and Yale Universities and the University of Pennsylvania, the University of Chicago, and the Baltimore branch of the Carnegie Institution. The committee undertakes to centralize all information and to act as a clearing bureau between the educational institutions of the United States and the Belgian victims of the war. The committee appeals to men interested in the development and diffusion of knowledge and art, and hopes that a liberal response will follow the appeal. Checks should be drawn payable to the Belgian Scholarship Committee, John Joy Edson, treasurer, 309 Wilkins Building, Washington, D. C.

DISCUSSION AND CORRESPONDENCE

DEMOCRACY AND THE WAR. A BRITISH SCHOOLMASTER'S VIEW

PROVERBIALLY, the looker-on sees most of the game, and, on that account, we, Britons, look for some guidance from our American cousins in connection with the consequences of the war. Hence, the British schoolmaster might expect considerable aid from the address by Mr. L. P. Lochner, "Should There Be Military Training in Public Schools?" published in SCHOOL AND SOCIETY for November 13.

But Mr. Lochner is a looker-on who appears to see little more than the obvious superficialities of the situation; he infers that

democracy in Britain is doomed because a British officer prattled to him in that strain. British democracy will win the war; and, having saved Britain and saved Europe, British democracy will take good care that militarism is strongly chained.

A superficial observer in Britain might note that the schoolmaster has gone to the trenches, that most schools have established cadet-corps, that the older men are training in thousands in volunteer training corps, that the fighting services are practically the only things that matter in Britain to-day. Let him make enquiries and he will find that those who can not fight are giving voluntary service on all sides, are devoting themselves to the national cause. Democracy in Britain is on its trial and democracy has decided that it must win the war.

The war came to us with a shock; we have settled down to it. We have determined that nothing else for the moment matters, until the fight is won. Prussian militarism must receive its death-blow, and the terms of peace must be such that Prussian militarism will not again be able to weld man-power, steel-power and chemical-power into an aggressive fighting machine. We are become materialistic, because only by materialistic means can we attain our goal; the war must be won, and we are become subordinate parts of a national fighting machine in order to gain so great a material advantage that we can materially prevent a recurrence of such a crime against humanity. We are a democracy in arms.

Britain has but one thought; and the schoolmaster, who is fit, becomes a soldier, while his colleague, who is unfit, runs a cadet-corps, so that his boys may be ready to fight if needed. We drill an officers' training corps or a corps of cadets because we have need of fighters, but we do not thereby surrender democracy either to the Prussian militarist or to an army machine. We loathe war in general, and this war in particular, but we can see our way to a goal, which will make future wars less probable, and—shall we hold back when the need arises? Because we create a machine for a specific purpose, need we maintain that machine when it is no longer necessary?

Professor Ellsworth Huntington has shown in his work on "The Distribution of Civilization" the fact that England is regarded as the home of the highest civilization in Europe. We, British schoolmasters, are profoundly interested in his tests and in his results, for the latter form a judgment upon the ideals of our profession and upon the work accomplished by generations of educators. This judgment presents the world's opinion upon the position of the democracy in Britain, and we should be false to our traditions, to our ideals, and to our duties were we to be stampeded into a surrender of democratic principles.

There is an ideal behind our treatment of the criminal. We use force to apprehend him, and, once he is convicted, we use force to restrain his criminal activities and we make efforts at the same time to supply remedial treatment. This ideal fits the present situation. Force, the quintessence of brute force, is required to apprehend the arch criminal and to restrain him from future outbreaks. His criminality is based upon material things—men, steel and chemicals—and his treatment in the future will involve restraint upon his resources of these material things. We recognize the problem as a great one; we, therefore, sacrifice much to perfect the means whereby we may reach our goal; we become fighters, and we proceed to train fighters, because we respond to the most urgent call which any democracy in the history of the world has yet heard. And afterwards? There is no afterwards worthy of any consideration unless the democracy of Britain can judge and sentence the Prussian criminal.

Once sentenced, the necessary precautions and the necessary remedial treatment will be undertaken, and democracy will then be freer than ever. And Kitchener's men, come home again, will know what militarism means. They will have fought against its most intensive product, they will have experienced the stupidity of the military caste which it engenders—of which Mr. Lochner's prattling officer is

not a unique specimen—and they will find the men at home equally sure of the dangers of militarism, and jointly they will make a new Britain. The war has given many things new values, and democracy will be strong enough to make the most out of the new situation, to raise Britain and British democratic civilization to a height far greater than that of the days before the war. Thinking men, and the new armies are full of such men, can not but be purged and strengthened by the trials which have come to us all.

B. C. WALLIS

LONDON, ENGLAND

QUOTATIONS

THE PROFESSORS' UNION

THE recent martyrdom of Dr. Scott Nearing, that pattern of pondered and dignified speech, at the hands of the trustees of the University of Pennsylvania, is still viewed with alarm by the organized professorate. Dr. Nearing is nursing his wounds in a comfortable post at Toledo University, but his woe goes marching on. "Academic freedom," that is, the inalienable right of every college instructor to make a fool of himself and his college by vealy, intemperate, sensational prattle about every subject under heaven, to his classes and to the public, and still keep on the payroll or be reft therefrom only by elaborate process, is cried to all the winds by the organized dons.

A committee of the American Association of Professors, appointed to set forth the means of guaranteeing "academic freedom," has made a report in which the "dangers" to that prime necessity in the treatment by professors of questions in "the political and social sciences" are dwelt on. The governing bodies of privately endowed colleges are largely men who have been successful in private business enterprises. When the political and social scientists attack economic conditions or commercial practises they are likely to come into conflict with these men, the representatives of "vested interests," those bogies of the innovators and radicals.

It may be worth while to make the perhaps too obvious remark that the "sciences" about which the uplift professors are apt to be most cocksure are pseudo-sciences, mere opinions. A sociologist, for instance, can not rightly speak with the certainty of a mathematician or a chemist. He often speaks with a great deal more, with an unreasoning heat and violence. It is in the politico-sociological region that the most academic friction is disengaged.

The situation of some of these pontifical professors is curious. Here is a college founded, perhaps, by some person who has got rich in business. Some, or many, of the trustees are guilty of the same crime. An ardent professor attacks wealth, perhaps recommends the confiscation of great estates, is fierce against the practises of the prosperous, has some vague, sentimental notion of depressing them to help "the poor." That is his privilege. He will be allowed to exercise it unless he carries his chartered libertinism of speech so far that he makes the college ridiculous and disgusts graduates and the parents of students. These private institutions can not live without the term fees. Parents will not send their sons to, will withdraw their sons from, colleges which are afflicted with one of these rash and sudden utterers of flubdub. Only in extreme cases, however, will the governors of the college, a much-enduring body, get rid of the nuisance. For opinions of the most radical sort there is a great toleration. It is not the opinions of certain errant and cometary instructors, it is the want of dignity in the expression of them, it is claptrap, sensationalism, appeal to the groundlings, the unwelcome notoriety they give the institution, that forces at last the hand of the trustees. Then the pother rises about "academic freedom," freedom to cheapen the reputation of the university and repel students. Academic freedom! Why, it is so great and general that one need have only the most casual knowledge of American colleges to know cases where professors whose loss both faculty and trustees would count a gain are kept in their places for fear of the hullabaloo of the professors' union.—The New York *Times*.

THE PROFESSOR'S PLACE IN THE WORLD

A YEAR ago, the American Association of University Professors appointed a special committee of fifteen, to consider the subject of academic freedom and academic tenure. The report of this committee has now been made public. To say that it bears the marks of such careful and accurate thought as the importance of the subject deserves, and as the deliberateness of the committee's action implies, would be to do less than justice to this admirable document. So excellent is its presentation of every essential element in the case, not only in substance but also in form, that, were it possible to get the whole paper read by the general public, comment upon it would be superfluous. Wholly free from exaggeration and from professional onesidedness, it presents with uncompromising clearness, and yet with all necessary qualifications, those principles upon the recognition of which depends the maintenance of an American professorate upon the plane on which it should stand; and it is hardly too much to say that in the compass of its twenty-two brief pages can be found a chart to which university authorities and outside critics may safely be referred for the resolution of any doubt concerning the proper status of the professor in his fundamental relations to the governing board of the university and to the community at large.

At the very foundation of the whole subject lies a proposition which ought to be axiomatic, and which in point of fact is coming to be more and more generally recognized, but which, as the committee says, "is not yet so universally accepted as it should be in our American institutions." This is that, except in those few institutions which are content to be classed as mere proprietary establishments, the trustees of a university must be regarded as "trustees for the public." Rarely, indeed, would this proposition be explicitly denied. But it was precisely because it was not clearly and firmly apprehended that the University of Pennsylvania got itself into the sad mess of the Nearing case; and, on the other hand, it was the complete recognition of this principle that formed the crowning merit of the admirable new code of procedure by the adoption of which the trustees of that university not only wiped out the discredit attaching to that incident, but did a signal service to the universities of the whole country.

Closely connected with this elementary idea is the question of the nature of the professor's calling. The committee finds it desirable "to restate clearly the chief reasons, lying in the nature of the university teaching profession, why it is to the public interest that the professorial office should be one both of dignity and of independence." Foremost among these reasons it places the necessity of such a status for the professorate in order that there may be attracted into its ranks "men of the highest ability, of sound learning, and of strong and independent character." The attraction of high pecuniary returns is, and always will be, absent; nor is it, in the opinion of the committee, "desirable that men should be drawn into this profession by the magnitude of the economic rewards which it offers"; all the more needful, then, is it that "men of high gifts and character should be drawn into it by the assurance of an honorable and secure position, and of freedom to perform honestly and according to their own consciences the distinctive and important function which the nature of the profession lays upon them." In enforcing the point that the members of the faculty are "the appointees, but not in any proper sense the employees," of the trustees, the committee has hit upon a peculiarly happy analogy:

> So far as the university teacher's independence of thought and utterance is concerned—though not in other regards—the relationship of professor to trustees may be compared to that between judges of the federal courts and the executive who appoints them. University teachers should be understood to be, with respect to the conclusions reached and expressed by them, no more subject to the control of the trustees, than are judges subject to the control of the president, with respect to their decisions; while, of course, for the same reason,

trustees are no more to be held responsible for, or to be presumed to agree with, the opinions or utterances of professors, than the president can be assumed to approve of all the legal reasonings of the courts.

Upon the reasons why it is of the highest importance to the nation that this independence of thought and expression be assured, the committee says much that we should be glad to quote; but it is the less necessary to do so because the point has been repeatedly insisted upon in these columns. Whether the institution be governed by trustees, representing primarily the wishes of wealthy founders and benefactors, and drawn largely from the same class, or whether it be a state university and therefore subject to the control of popular opinion, there is alike danger of a warping or suppression of the free play of disinterested scientific thought; a danger against which nothing can serve as protection except just such freedom of utterance for men of independent mind as is demanded by the principles set forth in this report, and provided for in the "practical proposals" with which it closes. That the assurance of this freedom should not be permitted to serve as a protection for the incompetent, the loud-mouthed, or the hare-brained is fully taken into account and provided for; what is demanded is not that such men should be retained in their posts, but that, before action is taken, their cases should be passed upon by men fitted to judge—in other words, by competent men of their own calling. "The existence of this association," says the committee, in concluding its "General Declaration of Principles," "must be construed as a pledge, not only that the profession will earnestly guard those liberties without which it can not rightly render its distinctive and indispensable service to society, but also that it will with equal earnestness seek to maintain such standards of professional character, and of scientific integrity and competency, as shall make it a fit instrument for that service." We congratulate the committee on the evidence which the quality of its report furnishes of the fitness of the American professorate to fulfil this high function.—The New York *Evening Post*.

BOOKS AND LITERATURE

High School and Class Management. By H. A. HOLLISTER. D. C. Heath & Co., 1915. Pp. xvi, 314.

In the face of the ever increasing number of books that profess to guide the young teacher in his high-school problems, it has become necessary to approach a new publication with caution. Is he to accept a mentor who rests his entire educational policy on a philosophic basis, or is he to shape his judgments, influenced solely by the practical issues of school management? Among the many books that have aimed in recent years to set forth definite convictions on the questions involved, only a very few deserve general recognition and approval. Such a book, with very special attention to educational method and to the underlying psychology that determines class-room procedure, was Professor S. C. Parker's "Methods of Teaching in High Schools" (Ginn & Co., 1915); such too, seems to be, from the point of organization and management, the volume indicated at the head of this article.

There dominates this book of Mr. Hollister's a catholic spirit; he disavows dogmatic utterances; he recognizes that they are hardly in place amid the conflicting tendencies in high-school development. There is recorded in this publication an extensive experience of many schools and many school administrators, a sympathetic appreciation of their problems, and an open-minded discussion of their way of meeting these problems. Here are factors which are at present distinctly more valuable than premature adoption of *one* definite code of high-school procedure which a couple of years hence may have to be overthrown as useless. In this avoidance of a definite scheme there is evidence of distinct wisdom. The whole high-school question is still in the seething formative stage. We find emphasis placed, and we are grateful for it, upon the needs of organization and of management, upon sound instruction. It is well to have these matters of actual instruction accentuated, seeing that they are in danger of increasing neglect among the present-day teachers.

There can be no doubt that the most crying evil in our secondary teaching is lack of *knowledge*, of broad vision, of readily available information on the part of our teachers. They do not bring to their work accuracy and a resourceful grasp of detail. It has been lacking in many cases in the training they received in their own secondary-school life. It is not assured by the character of the college requirements; approximation to knowledge, a certain hazy attainment rather than precision and accuracy of information often make it impossible for the teacher to speak with definite authority on the topic he handles. He is amiably indefinite in his own teaching, and being often uncertain in his views, does not control the work of his pupils toward accuracy. The usual tests which suffice to determine graduation from college are inadequate to establish that proficiency in knowledge and content which should be deemed essential in the case of every teacher. It is much to Mr. Hollister's credit that he ranks actual knowledge high in the scale of teaching capacity.

Acquaintance with the many devices suggested for the measurement of efficiency is valuable *as far as it goes*. Many of them would be superfluous if the teaching power were based on definite and accurate attainment, and were transmitted from a teacher in easy control of the material, to pupils who would then prove responsive to a direct and positive guidance. Much of the talk about incitement and originative effort of the pupil emanates from teachers who are themselves unsound in the fundamentals of their subject.

Mr. Hollister's discussion invites constant thought; thus, the tables that he presents on pages 22 to 39 embodying the principal legal facts concerning high schools in the various states, might be made the basis of a year's discussion in any training college. What a medley is suggested, for instance, in the tabulation of these questions: Conditions of admission; supervision and instruction of high schools; text-book prescription; teachers' qualifications!

There is a sanity in many of Mr. Hollister's utterances, distinctly reassuring in these days of ill-considered generalizations. Is it not true, for instance, that "in determining just what proportion of a curriculum should go to meet the demands of society we are still at a loss for data?" In other words, we lack altogether the proper basis for discussion of these questions. Again, is it a shock to some educational Hotspur that Mr. Hollister finds the educational conservatism in many school systems not without its advantages? It saves many a community from costly experiments with ill-advised plans. In his temperate but firmly expressed judgments we realize with what grave conditions in high-school experimentation he has personally been brought into contact. "There is need of a *definite* plan for conducting educational experiments by states. This should be done at state expense, under *competent* direction and in typical situations; the results, clearly pointing out difficulties and dangers as well as advantages, should be supplied to all school officials." We realize of course that an extreme centralizing tendency is inadvisable for our country, but that need not involve us in wasteful reiteration of experiments that have been tested elsewhere and found ineffective.

Under the form of a polite phraseology there obtrude themselves frequently truths that must be unpalatable in some quarters. Note, for instance, his comment on the desire of certain school boards for teachers of the highest possible qualifications; "it is a problem in economics as well as a matter of ideals." In other words cease *talking* about your educational ideals, be ready to *pay* for them. It may be a matter of personal preference that makes me single out such features as the discussion of the supervisory function that should devolve upon the school principal. One might almost demand a still greater emphasis of this very point—that the guidance of the younger teachers should be the most solemn duty of the principal and the experienced teachers on his staff. We can not deny that there is at this point a very serious defect in our teaching system. Our older teachers (principals and heads of departments) do not feel with sufficient vividness that professional pride which

should be the soul of all good teaching. It should insure their zealous effort to make the newer and younger teachers worthy of themselves and the school traditions. The doctrine that each new teacher should be allowed to work out his own salvation, without the direct advice from the older and wiser group, is a *thoroughly pernicious* one. In other less intellectual pursuits we praise team work; why not develop its potency in the teaching body? Or do we perhaps lay less stress upon the suggestions and advice that the older teachers can contribute, because we are not very sure that they are themselves possessors of definite standards, that they know what constitutes good teaching? They have at all events secured experience, and even the scholarly young aspirant may render his work more effective by utilizing expert professional attainment.

Mr. Hollister may be commended as a safe guide on the question of the internal government of schools; thoroughly committed to a democratic school organization he pronounces against the very term "student government" as an unnatural and illogical condition. On this question, as on many others, he gives in brief words the merits of the situation; his comments are a valuable aid to teachers unfamiliar with the history of the various problems involved. Again, in the chapter on the Readjustment of the School Organization, while he favors the tendency toward a redivision of the 12-year program into 6 and 6, or 6 plus 3 plus 3, he warns (page 93) against "complicating the situation, and impeding progress on the part of the radical promoters of industrial education who are urging this adjustment largely in the interests of trade education." A careful study of pages 115 and 116 may safely be suggested to those who propose to undertake the vocational guidance of pupils. The seriousness of responsibility involved is disclosed in no uncertain language, and some of the methods already in vogue are subjected to a searching scrutiny (pages 118 and 119).

The quality of Mr. Hollister's experience entitles to considerable consideration his utterances in Part III., on Class Management and Teaching; in his school visitations he has observed great variations in method and technique. Here his opinions often duplicate previous statements of men who are specially conversant with the one or the other phase of high-school work, but he constantly bears in mind that the high-school pupil is not to be treated as an incipient specialist, that "it is an attitude of mind through training that is the fundamental thing." We agree cordially with him when he advocates more deliberate advance in the earlier years of the expanded secondary-school curriculum.

In the latter pages of the volume Mr. Hollister indicates criteria for the selection of high-school text-books; they do not seem to your reviewer to be sufficient. The values of text-books should be determined by a larger and more representative body of experts than any one school possesses. In Germany and France it is customary to collect the opinions of many expert teachers on current text-books, and to establish through standing committees a canon of standard texts; from the concurrent testimony of such responsible groups it is safer to reach conclusions as to the value of extant text-books.

Finally there should be stated, as a redeeming quality of this book, that it endeavors to state its positions plainly and directly, and that the absence from its pages of a conventional educational jargon, which is much in evidence in some other widely heralded publications, is one of its great merits.

TEACHERS COLLEGE, JULIUS SACHS
COLUMBIA UNIVERSITY

EDUCATIONAL RESEARCH AND STATISTICS

THE SIZE OF THE COLLEGES FROM WHICH FELLOWS ARE APPOINTED AT HARVARD UNIVERSITY

THERE has been a great deal of discussion in recent years about the efficiency of large and small colleges. Most of these discussions lack value because they are not based upon facts which are measurable. At best they are only opinions.

It is the practise of our universities to appoint to fellowships "students of promise and

standing." The above expressive phrase is used by donors of the Sheldon fellowships at Harvard. The donors of another fellowship used somewhat more explicit language in saying the fellowship was to be "reserved exclusively for men of the highest intellectual attainments and of the greatest promise as productive scholars." An appointment to a fellowship in Harvard University would be good evidence that the appointee had been well prepared to do graduate work.

This study has been made in the following manner: From the last published catalogue of Harvard University the names of fellows were secured and the name of the institution from which the bachelor's degree was received and the year of graduation. It was the purpose then, by means of the Report of the United States Commissioner of Education, to find out the size of the undergraduate department of the institutions at the time of the graduation of the fellows. Since more graduated in 1912 than any other one year the labor was lessened by determining the size of the college in the year of 1912 for each of the fellows. Then, further, the size of the colleges in 1912 from which all graduate students received their first degrees was determined. Most of the Harvard graduate fellowships are open to graduates of all colleges. A few deeds of gift make the fellowships open only to Harvard graduates and a few others ask that preference be given graduates of Harvard College.

The question is, How many students in the Harvard graduate school are from a college of a given size and how many of this number were singled out as peculiarly worthy through natural ability and training to be honored with a fellowship? What is the ratio of fellows to students for each group of institutions? For purposes of comparison we may first consider colleges of less than 100 students, from 100 to 200, from 200 to 300, etc. The table given above shows the results of the inquiry.

Size of College	Less than 100	100 to 200	200 to 300	300 to 400	400 to 500	500 to 600	600 to 700	700 to 800	800 to 900	900 to 1,000	1,000 to 1,100	1,100 to 1,200	1,200 to 1,300	1,300 to 1,400	1,400 to 1,500	1,500 to 1,600	1,600 to 1,700	1,700 to 1,800	1,800 to 1,900	1,900 to 2,000	2,000 to 2,100	2,100 to 2,200	Harvard	Above 2,300
Number of graduate students in Harvard ...	18	28	16	35	47	36	14	0	17	5	5	8	20	21	9	21		3	7	7	0	1	150	25
Number of holders of fellowships	1	6	1	2	4	3	2	0	0	0	1	0	2	1	0	3		0	0	0	0	0	15	2
Ratio.....	1 to 18	1 to 5	1 to 16	1 to 18	1 to 12	1 to 12	1 to 7				1 to 5		1 to 10										1 to 10	1 to 13

Of the eighteen in the first group eleven came from institutions with less than thirty-five students. Of the twenty-eight in group two, nineteen were from colleges with from 150 to 200 students.

We may make other groupings.

Size of College	Less Than 300	300 to 500	500 to 1,000	1,000 to 1,500	1,500 Up	Harvard
Students...	62	82	72	63	66	150
Fellows...	8	6	5	4	5	15
Ratio.....	1 to 8	1 to 14	1 to 15	1 to 16	1 to 14	1 to 10

Size of College	Less than 400	400 to 800	800 to 1,500	Above 1,500 Not Including Harvard	Harvard
Students.....	97	97	86	66	150
Fellows.....	10	9	4	5	15
Ratio.....	1 to 10	1 to 11	1 to 22	1 to 14	1 to 10

Of course, there can be no conclusion drawn from these data as to the size of college which prepares most efficiently for graduate work. It does warrant the conclusion that men, whether connected with large or small institutions, ought to be chary with disparaging remarks about the small college.

GEORGE B. RANDELS

ALMA COLLEGE,
ALMA, MICHIGAN